

RD-A167 687

MISSILE ELECTRONIC EQUIPMENT CAREER LADDER AFSC 411X0A  
(FORMERLY AFSC 316X2G)(U) AIR FORCE OCCUPATIONAL  
MEASUREMENT CENTER RANDOLPH AFB TX P M ERICHSEN ET AL.

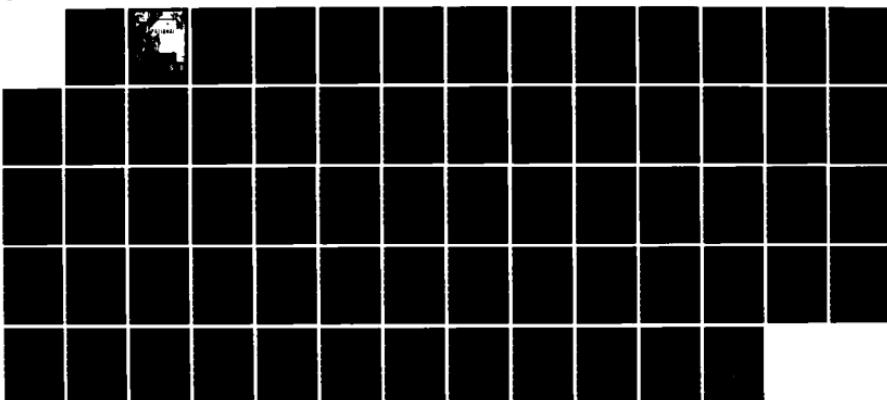
1/1

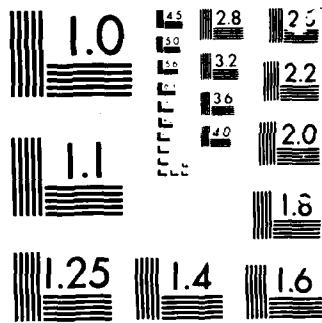
UNCLASSIFIED

MAR 86

F/8 5/9

NL





MICROCOM

CHART



UNITED STATES AIR FORCE

# OCCUPATIONAL SURVEY REPORT

AD-A167 687

MISSILE ELECTRONIC EQUIPMENT  
CAREER LADDER

AFSC 411X0A  
(FORMERLY AFSC 316X2G)

AFPT 90-316-545

MARCH 1986

2  
DTIC  
ELECTED  
MAY 12 1986  
S D  
R

OCCUPATIONAL ANALYSIS PROGRAM  
USAF OCCUPATIONAL MEASUREMENT CENTER  
AIR TRAINING COMMAND  
RANDOLPH AFB, TEXAS 78150-5000

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

66-111-110

DISTRIBUTION FOR  
AFSC 411X0A (FORMERLY 316X2G) OSR AND SUPPORTING DOCUMENTS

	<u>OSR</u>	<u>ANL</u>	<u>TNG</u>	<u>JOB</u>
	<u>EXT</u>	<u>EXT</u>	<u>EXT</u>	<u>INV</u>
AFHRL/MODS	2	1m	1m	
AFHRL/ID	1	1m	1m/1h	
AFMEA/MEMD	1	1h	1	
AFMPC/DPMRTC	2			
ARMY OCCUPATIONAL SURVEY BRANCH		1		
CCAF/AYX		1		
DEFENSE TECHNICAL INFORMATION CENTER	2			
HQ AFISC/DAP	2			
HQ ATC/TTQL	2		1	
HQ SAC/DPAT	3		3	
HQ SAC/TTGT	1		1	
HQ USAF/LEYW	1		1	
HQ USAF/MPPT	1		1	
HQ USMC (CODE TPI)	1			
NODAC	1			
USAFOMC/OMYXL	10	2m	5	10
DET 2, USAFOMC (CHANUTE AFB IL)	1		1	1
3330 TCHTW/TTGX (CHANUTE AFB IL)	8	2	14	4
3330 TCHTW/TTS (CHANUTE AFB IL)	1		1	
3507 ACS/DPKI	1			

m = microfiche only

h = hard copy only

Accesion For		
NTIS	CRA&I	<input checked="" type="checkbox"/>
DTIC	TAB	<input type="checkbox"/>
Unannounced		<input type="checkbox"/>
Justification .....		
By .....		
Distribution /		
Availability Codes		
Distr	Avail and/or Special	
A-1		

## TABLE OF CONTENTS

	<u>PAGE NUMBER</u>
PREFACE . . . . .	iii
SUMMARY OF RESULTS . . . . .	iv
INTRODUCTION . . . . .	1
Background. . . . .	1
SURVEY METHODOLOGY . . . . .	2
Inventory Development . . . . .	2
Survey Administration . . . . .	3
Survey Sample . . . . .	4
Task Factor Administration. . . . .	4
SPECIALTY JOBS . . . . .	7
Overview of Specialty Jobs. . . . .	7
Group Descriptions. . . . .	9
Comparison of Specialty Jobs. . . . .	12
ANALYSIS OF DAFSC GROUPS . . . . .	13
Skill Level Descriptions. . . . .	16
ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS. . . . .	21
ANALYSIS OF TAFMS GROUPS . . . . .	24
First-Enlistment Personnel. . . . .	24
Job Satisfaction. . . . .	28
TRAINING ANALYSIS. . . . .	28
Training Emphasis and Task Difficulty Data. . . . .	30
Specialty Training Standard . . . . .	30
Plan of Instruction . . . . .	31
Analysis of Equipment Used at the Technical School. . . . .	36
ELECTRONICS PRINCIPLES INVENTORY . . . . .	39
COMPARISON OF CURRENT SURVEY TO PREVIOUS SURVEY. . . . .	42
SURVEY COMMENTS. . . . .	46
General Comments. . . . .	46
Strength and Stamina. . . . .	46
IMPLICATIONS . . . . .	46
APPENDIX A . . . . .	48
APPENDIX B . . . . .	49

## SUMMARY OF RESULTS

1. Survey Coverage: A total of 80 airmen (89 percent of eligible personnel) in the 316X2G career ladder were surveyed. This sample was representative in terms of MAJCOM and grade distribution.
2. Specialty Jobs: Six distinct job types were identified in the analysis. Four of these job types consist primarily of personnel performing electronics laboratory (E-LAB) maintenance tasks. Differences among these four job types seem dependent on two main factors: experience level of the personnel performing the maintenance tasks and missile weapon system maintained (WS-133AM, WS-133AM/CDB, or WS-133B/CDB), although no substantial degree of specialization around a specific system was identified. The remaining two job types consist of personnel performing tasks common to supervisory and quality control functions.
3. Career Ladder Progression: Most 3- and 5-skill level personnel perform highly maintenance-oriented jobs, while 7-skill level personnel are involved almost exclusively in jobs relating to supervisory and quality control functions.
4. AFR 39-1 Specialty Descriptions: The description for 3- and 5-skill level personnel accurately portrays the highly maintenance-oriented, as well as limited supervisory nature of the job. The description for 7-skill level personnel, however, does not accurately reflect the predominantly supervisory, managerial, and administrative nature of the job and tends to overstate the amount of activity in day-to-day maintenance tasks.
5. Training Analysis: Several paragraphs of the AFSC 411XOA STS covering mainly 494L equipment and WS-133B/CDB system-specific equipment were not supported by survey data. Also, several tasks were not referenced to the STS that were supported by survey data. The course POIs were well supported by survey data; however, several tasks involving maintenance of equipment common to the WS-133 systems were not matched to either POI. These tasks should be reviewed for possible inclusion in the common portion of the POIs. Additionally, training personnel should explore the possibility of combining the system-specific AFSC 411XOA AZR courses (former 316X2G ABR courses) into a single course covering key principles for both the WS-133A and WS-133B/CDB missile weapon systems.
6. Implications: The career ladder training documents (STS and POIs) require some adjustments which should be considered by training personnel. Additionally, the 7-skill level AFR 39-1 Speciality Description warrants changes in emphasis on some duties described.

OCCUPATIONAL SURVEY REPORT  
MISSILE ELECTRONIC EQUIPMENT CAREER LADDER  
(AFSC 411XOA)  
(FORMERLY AFSC 316X2G)

INTRODUCTION

This is a report of an occupational survey of the Missile Electronic Equipment career ladder (AFSCs 31632G, 31652G, and 31672G) completed by the Occupational Analysis Division, USAF Occupational Measurement Center. Because the last occupational survey report (published June 1978) combined AFSC 316X0G (Missile System Analyst) and AFSC 316X2G/H (Missile Electronic Equipment) responsibilities, the current survey was requested by the Chief, Missile Maintenance/Electronics Branch at Chanute Technical Training Center to focus more specifically on tasks currently being performed by AFSC 316X2G personnel. This information will be used to assist in future technical course revisions. In addition, this report will provide information concerning personnel utilization, job structure, and impact on classification.

Background

The G-shred of the Missile Electronic Equipment career ladder, AFSC 316X2G, was originally established in 1966 with the merger of two AFSCs: AFSC 311X0G, Missile Checkout Equipment Repairman or Technician, and AFSC 314X0G, Missile Launch Equipment Repairman or Technician. Through March 1981, AFSC 316X2G personnel maintained the WS-133AM and WS-133AM/CDB missile weapon systems. Then, in April 1981, AFSC 316X2H responsibilities (which included responsibility for the WS-133B/CDB missile weapon system) were absorbed into AFSC 316X2G. The career ladder remained unchanged until April 1985, when AFSC 316X0G, Missile Systems Analyst Specialist or Technician, and AFSC 316X2G were combined to form AFSC 411XOA, Missile Systems Maintenance Specialist or Technician. This occupational survey was initiated prior to the restructuring, and was initially intended to examine the responsibilities of the then-AFSC 316X2G personnel. The survey sample was identified and data were collected from incumbents who held AFSC 316X2G. Although now part of AFSC 411XOA, these former AFSC 316X2G responsibilities will be dealt with separately in this report. Similar information concerning former AFSC 316X0G responsibilities were reported in a previous occupational survey report (Report Number: AFPT 90-316-529, dated July 1985) for AFSC 316X0G. Copies of that report may be obtained upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB, Texas 78150-5000.

As described in the AFR 39-1 Specialty Descriptions for AFSC 316X2G, personnel in this career ladder are responsible for maintaining the WS-133AM, WS-133AM/CDB, and WS-133B/CDB missile weapon systems found on Minuteman II and Minuteman III missiles. Meeting these requirements involves performing field maintenance on missile electrical and guidance and control systems and subsystems; electronic test, launch control and checkout, and related ground support equipment; and connecting and operating test and checkout equipment used

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

in isolating malfunctions. In addition, 7-skill level requirements include assisting, advising, and coordinating detailed field maintenance on electronic checkout equipment.

Before the April 1985 merger of AFSCs 316X0G and 316X2G, technical training for the award of AFSC 316X2G was accomplished by attending two courses at Chanute AFB IL: Electronics Principles Course AQR31020-002, Blocks I through IX, followed by one of two separate airman basic resident (ABR) courses, each corresponding to a specific missile weapon system (WS-133AM and WS-133AM/CDB or WS-133B/CDB). Upon graduation from technical school, 316X2G personnel were assigned to electronics laboratories (E-LABS) at one of seven missile bases in the continental United States, based upon the type of missile weapon system training they received.

As a result of the April 1985 merger, two major changes occurred. First, the former ABR courses for award of AFSC 316X0G were renumbered and became the new ABR courses for award of AFSC 411X0A. To be awarded this AFSC, students now attend only Blocks I through IV of Electronics Principles Course AQR31020-002 before advancing to the ABR courses. Secondly, the former 316X2G ABR courses were renumbered and converted to AZR courses for AFSC 411X0A. These courses are not AFSC-awarding. Course C3AZR41150A-000, which lasts 11 weeks, 4 days, pertains to the WS-133AM and WS-133AM/CDB missile weapon systems. Course C3AZR41150A-001, which lasts 12 weeks, 4 days, pertains to the WS-133B/CDB missile weapon system. Coverage in both courses includes inspection and maintenance of standard and special test equipment, and isolation and correction of launch equipment and test equipment malfunctions. To attend either of these courses, an individual must now have a minimum of 3 years field experience in former AFSC 316X0G or AFSC 411X0A. Graduation from either AZR course is a prerequisite for award of SEI 809, Missile Electronic Equipment Maintenance. This SEI is awarded after 12 months of field experience following the AZR course and is based on a recommendation from the individual's supervisor. It is assumed that students attending the AZR courses have gained experience in electronic principles from the field; thus, Blocks V through IX of Course AQR31020-002 are not required to receive the SEI.

## SURVEY METHODOLOGY

### Inventory Development

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-316-545, dated July 1984. A preliminary task list was prepared after reviewing pertinent career ladder publications and directives, tasks from the previous survey instrument, and data from the last occupational survey report (OSR). Initial preparation for the current task list also required a complete reworking of the last inventory during a workshop at Chanute Technical Training Center. Since the last inventory covered tasks for both the 316X0G and 316X2G/H career ladders, those tasks related only to AFSC 316X2G/H airmen (AFSC 316X2H tasks were absorbed into the AFSC 316X2G career ladder in 1981) had to be extracted and updated. The preliminary task list

was refined and validated through personal interviews selected to cover a wide variety of missile equipment maintenance functions at the following locations:

- Ellsworth AFB SD - Only base that maintains the WS-133AM missile weapon system
- Malmstrom AFB MT - Only base that maintains both the WS-133AM/CDB and WS-133B/CDB missile weapon systems
- Vandenberg AFB CA - Only test facility base for all three missile weapon systems
- Whiteman AFB MO - Only base with 494L and peripheral equipment

The development process resulted in a final job inventory containing a list of 643 tasks grouped under 17 duty headings and a background section containing such information as grade, total active federal military service (TAFMS), duty title, job satisfaction indicators, and test and general equipment used.

#### Survey Administration

During the period September 1984 through February 1985, Consolidated Base Personnel Offices (CBPO) in operational units worldwide administered the inventory to job incumbents holding AFSC 316X2G. These personnel were selected from a computer-generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL).

Each individual who completed the inventory first completed an identification and biographical section and then checked each task performed in his or her current job. After checking all tasks performed, each member then rated each of these tasks on a 9-point scale showing relative time spent on that task, as compared to all other tasks checked. The ratings ranged from 1 (a very small amount of time spent) to 9 (a very large amount of time spent).

To determine relative time spent for each task checked by a respondent, all of an incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task ratings and multiplied by 100 to provide a relative percentage of time for each task. This procedure provides a basis for comparing tasks in terms of both percent members performing and average percent time spent.

### Survey Sample

To ensure an accurate representation across such groups as paygrade and TAFMS, survey booklets were mailed to all eligible AFSC 316X2G personnel. Table 1 reflects the percentage distribution, by major command (MAJCOM), of assigned personnel in the career ladder as of June 1984. Also shown is the MAJCOM percentage distribution of the survey respondents. As expected for a missile-related AFSC, nearly all personnel are assigned to SAC. Tables 2 and 3 show sample distributions for paygrade and TAFMS groups. The 80 respondents in the final sample represent 78 percent of the total assigned AFSC 316X2G personnel, and 89 percent of those eligible. As Tables 1 through 3 reflect, the survey sample provides a very good representation of the career ladder population.

### Task Factor Administration

In addition to completing the job inventory, selected senior AFSC 316X2G personnel were asked to complete a second booklet for either task difficulty (TD) or training emphasis (TE). These booklets are processed separately from the job inventories. The rating information is then used in a number of different analyses discussed in detail within this report.

Task Difficulty (TD). Each senior technician completing a TD booklet was asked to rate all inventory tasks on a 9-point scale, ranging from 1 (extremely low relative difficulty) to 9 (extremely high relative difficulty). Difficulty is defined as the length of time required by the average member to learn to do the task. The interrater reliability (as assessed through components of variance of standarized group means) of the TD data provided by 18 senior technicians was .92, indicating excellent agreement among raters. Task difficulty ratings were adjusted so tasks of average difficulty have a rating of 5.00, with a standard deviation of 1.00. The resulting data are essentially a rank ordering of tasks indicating the degree of difficulty of each task in the inventory.

Job Difficulty Index. After relative difficulty ratings were obtained for the AFSC 316X2G tasks, it was possible to compute a Job Difficulty Index (JDI) for the job groups identified in the survey analysis. This index provides a relative measure of which jobs, when compared to other jobs identified, are more or less difficult. An equation using the number of tasks performed and the average difficulty per unit time spent (ADPUTS) as variables are the basis for the JDI. Thus, the more time a group spends on difficult tasks, and the more tasks they perform, the higher the JDI for that group. The index ranges from 1.00 for very easy jobs to 25.00 for very difficult jobs. The indices are adjusted so the average JDI is 13.00.

Training Emphasis (TE). Senior technicians completing TE booklets were asked to rate inventory tasks on a 10-point scale, ranging from 0 (no training required) to 9 (extremely heavy training required). Training emphasis is a rating of which tasks require structured training for first-enlistment personnel. Structured training is defined as training provided at resident technical schools, field training detachments, mobile training teams (MTT), formal OJT,

TABLE 1  
COMMAND DISTRIBUTION OF SURVEY SAMPLE

<u>COMMAND</u>	<u>PERCENT OF ASSIGNED (N=103)</u>	<u>PERCENT OF SAMPLE (N=80)</u>
SAC	91	91
ATC	9	9
Total Assigned* -	103	
Total Eligible** -	90	
Total in Sample -	80	
Percent of Assigned in Sample -	78%	
Percent of Eligible in Sample -	89%	

\*Assigned strength as of June 1984

\*\*Excludes those in PCS status, students, hospitalized personnel, and personnel with less than six weeks on the job

TABLE 2  
PAYGRADE DISTRIBUTION OF SURVEY SAMPLE\*

<u>PAYGRADE</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
AIRMAN	17	15
E-4	33	31
E-5	27	30
E-6	11	13
E-7	13	11

\*Columns may not add up to 100 percent due to rounding

NOTE: Manning figures as of June 1984

TABLE 3  
TAFMS DISTRIBUTION OF SURVEY SAMPLE\*\*

<u>TAFMS (MONTHS)</u>	<u>PERCENT OF ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
1-48	44	35
49-96	23	29
97-144	13	16
145-192	9	9
193-240	12	10
241+	*	1

\*Less than 1 percent  
\*\*Columns may not add up to 100 percent due to rounding

NOTE: Manning figures as of June 1984

or any other organized training. The interrater reliability (as assessed through components of variance of standarized group means) of the TE data provided by 15 senior technicians was .82, indicating an acceptable level of agreement among the available raters. In this speciality, tasks rated high in TE have ratings of 2.27 and above, with an average TE of 1.10. As was discussed in the Task Difficulty section above, TE rating data may also be used to rank order tasks, indicating those tasks which senior NCOs in the field consider the most important for first-term airmen to know.

### SPECIALTY JOBS (Career Ladder Structure)

A key aspect of the USAF occupational analysis program is to examine the job structure of a career ladder. Based on incumbent responses to survey questions, the tasks performed by career ladder personnel are examined and job groups are identified based on the similarity of tasks performed by incumbents and the relative time they spend performing the tasks. The resulting job structure is then compared to official career ladder documents. This analysis of actual jobs performed is made possible by the use of the Comprehensive Occupational Data Analysis Program (CODAP). This information can be used to examine the accuracy and completeness of career ladder documents (AFR 39-1 Specialty Descriptions and Specialty Training Standards) and to gain an understanding of current utilization patterns.

Each individual in the survey performs a set of tasks called a Job. A group of individuals who perform many tasks in common, and spend similar amounts of time performing those tasks, is called a Job Type. When there is a substantial degree of similarity between different job types, they are grouped together and labeled as a Cluster. Those specialized job types too dissimilar to fit within a cluster are Tabeled Independent Job Types.

#### Overview of Specialty Jobs

The specialty job structure of the Missile Electronic Equipment career ladder was determined by performing a job type analysis of the survey data provided by career ladder incumbents. Based on task similarity and the amount of relative time spent performing each task, the jobs performed by 316X2G personnel separated into six distinct job types. Figure 1 illustrates this division of jobs. Four of the job types consist of personnel performing electronics laboratory (E-LAB) missile maintenance tasks. Differences between these four job types is based primarily on the missile weapon system maintained (WS-133AM, WS-133AM/CDB, or WS-133B/CDB) and the skill level of the personnel performing the maintenance tasks. The remaining two job types consist of personnel responsible for supervisory and quality control functions. They perform little to no maintenance tasks.

The six job types are listed below by title. The group (GRP) number beside each title is a computer-generated reference number. The letter "N" stands for the number of personnel in each group.

## 411X0A CAREER LADDER DISTRIBUTION

( PERCENT MEMBERS PERFORMING )

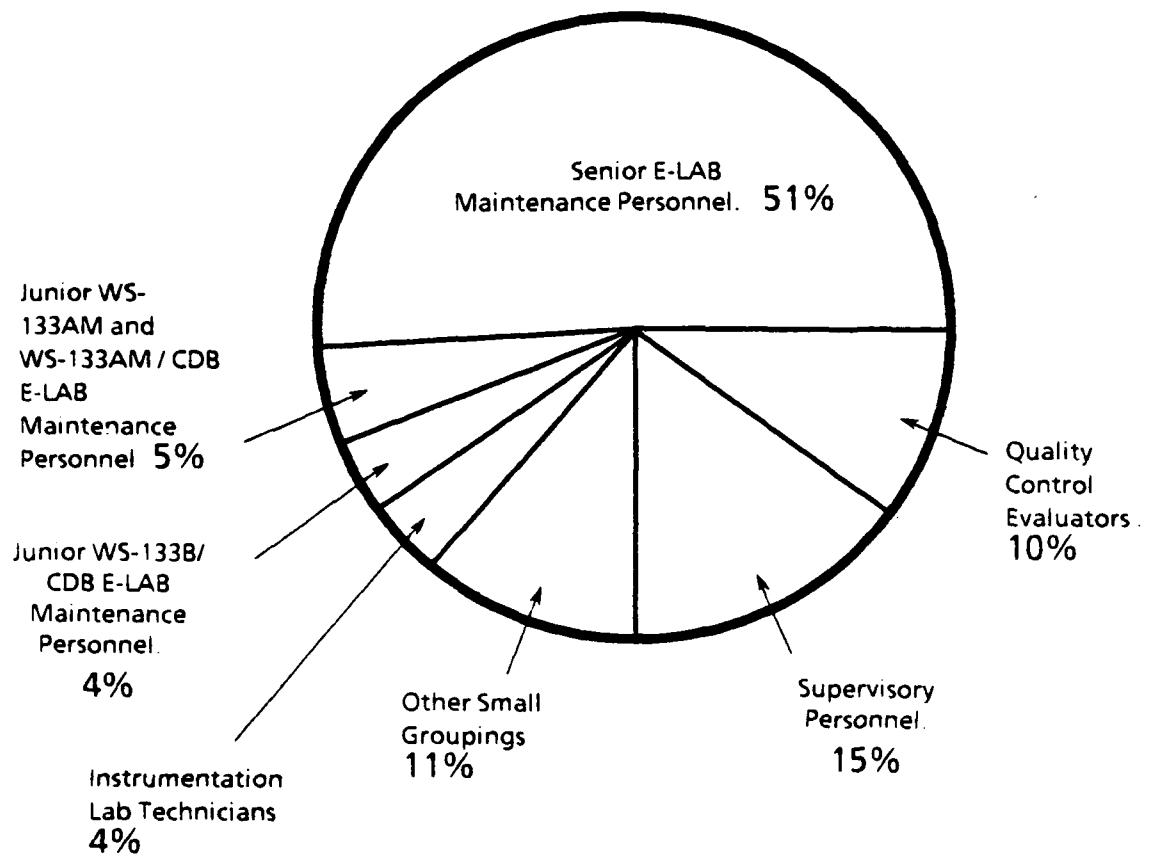


Figure 1

- I. SENIOR E-LAB MAINTENANCE PERSONNEL (GRP015, N=41)
- II. JUNIOR WS-133AM AND WS-133AM/CDB E-LAB MAINTENANCE PERSONNEL (GRP027, N=4)
- III. JUNIOR WS-133B/CDB E-LAB MAINTENANCE PERSONNEL (GRP016, N=3)
- IV. INSTRUMENTATION LABORATORY TECHNICIANS (GRP026, N=3)
- V. QUALITY CONTROL EVALUATORS (GRP018, N=8)
- VI. SUPERVISORY PERSONNEL (GRP013, N=12)

Eighty-nine percent of the survey respondents separated into the above job groups. The remaining 11 percent were performing tasks or sets of tasks that did not group with any of the defined job groups. Some of the job titles given by these personnel included Technical Instructor, Technical Order Distribution Monitor, and NCOIC Peacekeeper Systems Laboratory.

#### Group Descriptions

The following paragraphs contain brief descriptions of the job types identified in the analysis. Selected background and job satisfaction data are provided for these groups in Tables 4 and 5. Representative tasks, together with selected background data, are listed in Appendix A.

I. SENIOR E-LAB MAINTENANCE PERSONNEL (GRP015, N=41). This group of 41 airmen is the largest in the sample, accounting for over half (51 percent) of the survey respondents. These personnel are located at each of the seven missile bases, and the technical training center at Chanute AFB IL. Overall, this is the most senior group of maintenance personnel identified, with members averaging almost 5 years in the career field and over 6 years of active federal military service. Nearly one-third (29 percent) report supervising 1 to 4 people. They perform an average of 275 tasks, the highest of all job groups, with a large portion of their job time (27 percent) spent performing tasks specific to one of the WS-133AM, WS-133AM/CDB, or WS-133B/CDB missile weapon systems. Much of their job time is also spent performing general maintenance tasks (34 percent) and common equipment maintenance tasks (24 percent). Typical tasks performed include:

- perform checkouts of Minuteman Power Processors (MPP)
- perform checkouts of AN/GSM-82 electronic facility-base maintenance test equipment
- remove or install integrated circuit cards or printed circuit assemblies
- adjust AN/GSM-260 Guided Missile System Test Stations
- tighten bolts or nuts to specified torque values

About 83 percent of all group members are qualified at the 5-skill level, 12 percent are qualified at the 7-skill level, and the remaining 3 percent are qualified at the 3-skill level. The majority (63 percent) are beyond their first enlistment, with an average grade of E-4.

Three variations within this group also were identified in the analysis. The first variation includes a small group of personnel from Whiteman AFB MO. These personnel were the only respondents who performed tasks associated with 494L equipment. A second variation consists of personnel from Minot AFB ND, who spend most of their time performing first-line maintenance tasks (mainly equipment checkouts). The final variation consists of individuals from Malmstrom AFB MT and Minot AFB ND who perform tasks associated primarily with the WS-133AM/CDB system, but spend more time performing supervisory tasks, such as reviewing correspondence and conducting OJT. They identified themselves as NCOICs of an Electronics Laboratory.

II. JUNIOR WS-133AM AND WS-133AM/CDB E-LAB MAINTENANCE PERSONNEL (GRP027, N=4). The 4 members of this group (5 percent of the survey sample) are located at Ellsworth AFB SD, F.E. Warren AFB WY, and Minot AFB ND. These are relatively junior personnel, with members averaging 31 months in the career field and 35 months active federal military service. All are in their first enlistment. As junior personnel, the majority of their job time (51 percent) is spent performing general maintenance tasks, such as cleaning electronic equipment and removing or installing integrated circuit cards or printed circuit assemblies. A relatively small portion of their job time (14 percent) is spent performing maintenance tasks specific to the WS-133AM or WS-133AM/CDB missile systems. Overall, they perform an average of 120 tasks, with 53 tasks accounting for approximately 50 percent of their total job time. Examples of these tasks include:

- inventory tools
- tighten bolts or nuts to specified torque values
- tag serviceable or unserviceable equipment
- remove or install coaxial cables
- Maintain missile component containers,  
such as MGS or G&C
- perform checkouts of minuteman power processor  
verification boxes (MPPVB)/power system verification boxes (PSBV)

Two of these group members are qualified at the 5-skill level; the other two are qualified at the 3-skill level. Their average paygrade is E-4.

III. JUNIOR WS-133B/CDB E-LAB MAINTENANCE PERSONNEL (GRP016, N=3). The 3 members of this group (4 percent of the survey sample) are located at Grand Forks AFB ND. This group is unique in that personnel perform maintenance specifically on the WS-133B/CDB missile weapon system, accounting for 19 percent of their job time. As with the previous two maintenance-oriented groups

(GRP015 and GRP027), they also spend a large portion of their job time performing general maintenance tasks (29 percent) and common maintenance tasks (34 percent). Overall, they perform an average of 135 tasks, with 63 tasks accounting for approximately 50 percent of their total job time. Tasks which differentiate this group include:

- align units of R-1384/GRA-80 UHF radio receivers
- perform self-tests of AN/GSM-139 maintenance ground equipment test sets
- perform checkouts of AN/GSM-136 power supply test sets
- perform self-tests of AN/GSM-145 peripheral equipment
- perform self-tests of AN/GSM-131 power equipment test sets

Although averaging over 5 years active federal military service, these personnel have been in the career field for a relatively short period of time--an average of only 27 months. Their average paygrade is E-4.

IV. INSTRUMENTATION LABORATORY TECHNICIANS (GRP016, N=3). Most of the members of this group (4 percent of the survey sample) are located at Vandenberg AFB CA. This base is the only test facility base for all three missile weapon systems; their primary mission is to test and evaluate the Minuteman missile. These personnel perform tasks specific to the instrumentation laboratory at Vandenberg AFB, as well as maintenance tasks common to the WS-133AM, WS-133AM/CDB, and WS-133B/CDB missile systems. On the average, they perform 88 tasks. Examples of those tasks which are unique to the group include:

- mate MOD 7 to NS 20 MGS
- mate MOD 8 to NS 17 MGS
- perform checkouts of MOD 8 (MMII) instrumentation units
- calibrate data interface signal simulators OH-81-DSM-82 (DISS)
- troubleshoot data interface signal simulators OH-81-DSM-82 (DISS)

Most group members are in their first enlistment. All are qualified at the 5-skill level and hold an average paygrade of E-4.

V. QUALITY CONTROL EVALUATORS (GRP018, N=8). The 8 members of this group (10 percent of the survey sample) spend the majority of their job time (76 percent) on tasks related to quality control evaluation, such as observing personnel performing maintenance and performing technical inspections. Their job is quite limited in scope, with group members performing an average of only 30 tasks (the lowest of all job groups). Ten tasks account for nearly 50 percent of their relative job time. Some of these tasks include:

- prepare inspection reports
- evaluate personnel performing maintenance
- perform technical verification inspections
- review proposed technical data changes
- review and determine applicability of time compliance technical orders (TCTO) or master change logs (MCL)

The majority (63 percent) of these personnel are qualified at the 7-skill level; the remaining 37 percent are qualified at the 5-skill level. Most (88 percent) are in their second or subsequent enlistment. Their average paygrade is E-5.

VI. SUPERVISORY PERSONNEL (GRP013, N=12). This group of 12 airmen is the second largest in the sample, accounting for 12 percent of the survey respondents. The tasks they perform are supervisory in nature; less than 2 percent of their job time is spent on maintenance tasks. Most members identified themselves as NCOICs or Assistant NCOICs of an Electronics Laboratory; members from the technical training center at Chanute AFB IL identified themselves as either Course Supervisor or Division Superintendent. Almost all of these personnel (92 percent) reported some level of supervision. Overall, the group performs an average of 84 tasks, some of which include the following:

- coordinate activities of specialists
- prepare airman performance reports
- observe personnel performing maintenance
- counsel trainees on training progress
- supervise Missile Electronic Equipment Technicians (AFSC 31672G)

As expected, members of this group are senior personnel in the career ladder, averaging over 15 years of active federal military service. All are in their third or subsequent enlistment. The majority (92 percent) are qualified at the 7-skill level. Their average paygrade is between E-6 and E-7.

#### Comparison of Specialty Jobs

Six distinct job types were identified in the structure analysis of the career ladder. Personnel in four of these job types perform primarily maintenance-related tasks, while personnel in the remaining two job types perform tasks related mainly to supervisory and quality control functions. Distinctions between the maintenance-related job types seems to be based on two main factors: experience level of the personnel performing the maintenance tasks and missile weapon system maintained (WS-133AM, WS-133AM/CDB, or WS-133B/CDB), although no noteworthy degree of specialization around a specific system was identified. For example, while the Senior E-LAB Maintenance Personnel group contains members representing each of the three missile weapon systems, this group as a whole spends more time on system-specific maintenance than general

maintenance tasks. Conversely, while membership in the Junior WS-133AM and WS-133AM/CDB and Junior WS-133B/CDB E-LAB Maintenance groups is clearly system-specific, more of their relative job time is spent performing general maintenance tasks. In addition, all of the maintenance groups, to some degree, perform maintenance on equipment that is common to all three missile weapon systems. Thus, the specialty job analysis and survey data tend to support the merger of the former 316X2G and 316X2H specialties.

Difficulty of career ladder jobs was compared using the Job Difficulty Index (JDI) described in the Task Factor Administration section of this report (average JDI=13.00). As revealed in Table 4, only the Senior E-LAB Maintenance group reflects an above average JDI (16.7), while the remainder of the groups vary anywhere from a JDI of 5.6 for the Instrumentation Laboratory Technicians to a JDI of 12.5 for the Junior WS-133B/CDB E-LAB Maintenance Personnel. Overall, no distinct pattern emerged concerning the difficulty of jobs within the career ladder.

In addition to reviewing the functions of jobs identified, it is also useful to compare the groups in terms of background characteristics and job attitudes. Table 5 presents career ladder job group data pertaining to job satisfaction indicators, such as expressed job interest, perceived utilization of talents and training, and sense of accomplishment gained from the job, as well as reenlistment intentions. Overall, the percentages of group members responding positively to the job satisfaction indicators were quite high. Members in most groups discussed indicate the jobs they perform are interesting, with only one group (Instrumentation Laboratory Technicians, GRP026) showing less than 50 percent responding positively. Perceived use of talents for group members was also high, with all groups showing 67 percent or more responding positively. Responses pertaining to sense of accomplishment were also positive for all groups. In addition, members of most groups felt their training was being well used, with only one group (Supervisory Personnel, GRP013) reflecting less than 90 percent responding positively. Some variation was noted in terms of reenlistment intentions, although no definite pattern emerged.

In summary, this analysis supports the current career ladder structure. No substantial degree of specialization around a specific missile weapon system was identified among the job groups, although some differences were noted in terms of the type of maintenance tasks performed by junior and senior personnel.

#### ANALYSIS OF DAFSC GROUPS

An analysis of DAFSC groups, together with the analysis of the career ladder structure, is an important part of each occupational survey. The DAFSC analysis identifies differences in tasks performed at the various skill levels. This information may then be used to evaluate how well career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training

**TABLE 4**  
**SELECTED BACKGROUND INFORMATION FOR SPECIALTY JOB GROUPS**

	SENIOR E-LAB MAINT PERS	JUNIOR WS-133AM AND WS-133AM/CDB E-LAB MAINT PERS		JUNIOR WS-133B/CDB E-LAB MAINT PERS		INSTRUMENTATION LAB TECHS		QUALITY CONTROL EVALUATORS		SUPERVISORY PERSONNEL	
		41	4	5%	3	4%	3	4%	8	10%	12
NUMBER IN GROUP	41	4	5%	3	4%	3	4%	8	10%	12	15%
PERCENT OF SAMPLE	5%	5%	4%	4%	4%	4%	4%	8	10%	12	15%
AVERAGE NUMBER OF TASKS	275	120	135	88	88	88	88	30	30	30	30
JOB DIFFICULTY INDEX (JDI) (AVG JDI = 13.00)	16.7	7.9	12.5	5.6	5.6	5.6	5.6	9.0	9.0	9.0	9.0
MAJCOM (PERCENT)											
SAC	95%	100%	100%	100%	100%	100%	100%	88%	88%	88%	88%
ATC	5%	0	0	0	0	0	0	12%	12%	12%	12%
DAFSC (PERCENT)											
31632G	5%	50%	50%	33%	33%	33%	33%	0	0	0	0
31652G	83%	50%	67%	67%	67%	67%	67%	38%	38%	38%	38%
31672G	12%	0	0	0	0	0	0	62%	62%	62%	62%
AVERAGE GRADE	E-4	E-4	E-4	E-4	E-4	E-4	E-4	E-5	E-5	E-5	E-7
AVERAGE TICF (MONTHS)	58	31	27	45	45	45	45	107	107	107	122
AVERAGE TAFMS (MONTHS)	76	35	65	53	53	53	53	112	112	112	185
PERCENT FIRST ENLISTMENT	37%	100%	67%	67%	67%	67%	67%	13%	13%	13%	0

**TABLE 5**  
**JOB SATISFACTION INDICATORS BY SPECIALITY JOB GROUP**  
**(PERCENT MEMBERS RESPONDING)**

		SENIOR E-LAB MAINT PERS (N=41)	JUNIOR WS-133AM AND WS-133AM/CDB E-LAB MAINT PERS (N=4)	JUNIOR WS-133B/CDB E-LAB MAINT PERS (N=3)	INSTRUMENTATION LAB TECHS (N=3)	QUALITY CONTROL EVALUATORS (N=8)	QUALITY SUPERVISORY PERSONNEL (N=12)
<u>EXPRESSED JOB INTEREST:</u>							
INTERESTING	81	75	67	33	33	50	75
SO-SO	17	25	33	33	25	25	17
DULL	0	0	0	33	25	8	8
<u>PERCEIVED USE OF TALENTS:</u>							
FAIRLY WELL TO PERFECTLY	85	100	67	100	88	88	83
LITTLE OR NOT AT ALL	10	0	33	0	12	12	17
<u>PERCEIVED USE OF TRAINING:</u>							
FAIRLY WELL TO PERFECTLY	90	100	100	100	100	100	58
LITTLE OR NOT AT ALL	7	0	0	0	0	0	42
<u>SENSE OF ACCOMPLISHMENT FROM JOB:</u>							
SATISFIED	66	100	67	67	63	63	67
NEUTRAL	12	0	33	0	12	12	0
DISSATISFIED	20	0	0	33	25	25	33
<u>REENLISTMENT INTENTIONS:</u>							
WILL RETIRE	0	0	0	0	12	12	12
WILL/PROBABLY WILL REENLIST	56	50	33	67	38	38	38
WILL NOT/PROBABLY WILL NOT REENLIST	42	50	67	33	50	50	50

Standard (STS), reflect what career ladder personnel are actually doing in the field.

A comparison of the duty and task performance between DAFSCs 31632G and 31652G indicated that, while there are some minor differences, by and large, the jobs they perform are essentially the same. Therefore, they will be discussed as a combined group in this report. Nine-skill level and CEM code personnel were not surveyed and will not be discussed in this report. For the distribution of skill-level groups across the career ladder jobs, see Table 6. The relative percent time spent on each duty across the skill level groups is presented in Table 7.

#### Skill Level Descriptions

DAFSC 31632G/31652G. The 56 airmen in the 3- and 5-skill level group (70 percent of the survey sample) perform an average of 207 tasks, with 125 tasks accounting for approximately 50 percent of their job time. As shown in Table 6, most of these personnel are found in maintenance-related jobs, with limited involvement in supervisory or quality control functions. Three- and 5-skill level involvement in maintenance-related jobs is also reflected in Table 7, with personnel spending the greatest portion of their total job time performing maintenance tasks. These tasks primarily include general maintenance tasks, such as removing or installing missile equipment, and tasks associated with the maintenance of common WS-133 system equipment, such as performing checkouts and troubleshooting Minuteman Power Processors (MPP) (see Table 8). Tasks pertaining to administrative and supply actions account for an additional 10 percent of their duty time. Contrasting the job performance of 3- and 5-skill level personnel across weapon systems revealed no substantial differences in the majority of tasks performed, although some system-specific task differences among the group were noted.

DAFSC 31672G. Seven-skill level personnel, representing 30 percent of the survey sample, perform an average of 112 tasks, with 54 tasks accounting for almost 50 percent of their job time. As seen in Table 7, the transition from the 5-skill level to the 7-skill level is clearly marked, with 7-skill level personnel spending more of their relative time on duties involving supervisory, managerial, and administrative tasks (see Duties A-E) and a decreased amount of time on duties involving maintenance tasks. In fact, no maintenance duty accounts for more than 4 percent of their job time, which indicates that personnel at this level are predominantly involved in supervisory-type functions, with limited involvement in day-to-day maintenance functions. This is further reflected in Table 9, which lists those tasks most commonly performed by 7-skill level personnel. All of these tasks are general supervisory-type tasks which anyone in a supervisory-level job might be expected to perform. There are no substantial differences between weapon systems at the 7-skill level, in terms of tasks performed.

Comparison of DAFSC 31632G/31652G to 31672G Personnel. As Tables 6 through 9 show, career ladder progression is evident, with the jobs performed by 3- and 5-skill level personnel much different than those performed by 7-skill level

TABLE 6  
DISTRIBUTION OF DAFSC GROUPS ACROSS CAREER LADDER JOBS  
(PERCENT MEMBERS)

<u>CAREER LADDER JOBS</u>	<u>DAFSC 31632G/52G (N=56)</u>	<u>DAFSC 31672G (N=24)</u>
I. SENIOR E-LAB MAINTENANCE PERSONNEL (N=41)	64	21
II. JUNIOR WS-133AM AND WS-133AM/CDB E-LAB MAINTENANCE PERSONNEL (N=4)	7	0
III. JUNIOR WS-133B/CDB E-LAB MAINTENANCE PERSONNEL (N=3)	5	0
IV. INSTRUMENTATION LABORATORY TECHNICIANS (N=3)	5	0
V. QUALITY CONTROL EVALUATORS (N=8)	5	21
VI. SUPERVISORY PERSONNEL (N=12)	2	46
VII. NOT GROUPED	11	13

\*Columns may not add up to 100 percent due to rounding

TABLE 7  
RELATIVE PERCENT TIME SPENT PERFORMING DUTIES BY DAFSC GROUPS

<u>DUTIES</u>	DAFSC 31632G/52G (N=56)	DAFSC 31672G (N=24)
A. ORGANIZING AND PLANNING	1	9
B. DIRECTING AND IMPLEMENTING	1	10
C. INSPECTING AND EVALUATING	8	22
D. TRAINING	2	14
E. PERFORMING MAINTENANCE ADMINISTRATION FUNCTIONS	10	26
F. PERFORMING CHECKOUTS AND INSPECTIONS OF EQUIPMENT COMMON TO WS-133 SYSTEMS	11	3
G. TROUBLESHOOTING EQUIPMENT COMMON TO WS-133 SYSTEMS	8	2
H. CALIBRATING AND ADJUSTING EQUIPMENT COMMON TO WS-133 SYSTEMS	4	*
I. PERFORMING CHECKOUTS AND SELF-TESTS OF WS-133A EQUIPMENT	8	1
J. TROUBLESHOOTING WS-133A EQUIPMENT	6	1
K. CALIBRATING AND ADJUSTING WS-133A EQUIPMENT	3	*
L. PERFORMING CHECKOUTS AND SELF-TESTS OF WS-133B EQUIPMENT	3	*
M. TROUBLESHOOTING WS-133B EQUIPMENT	2	*
N. CALIBRATING AND ADJUSTING WS-133B EQUIPMENT	*	*
O. PERFORMING GENERAL MAINTENANCE ON MISSILE EQUIPMENT	11	3
P. PERFORMING GENERAL SHOP MAINTENANCE	4	2
Q. REMOVING OR INSTALLING MISSILE EQUIPMENT	17	4

\*Less than 1 percent

TABLE 8

TASKS PERFORMED BY 75 PERCENT OR MORE OF  
31632G/52G PERSONNEL

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
Q593 REMOVE OR INSTALL DUST CAPS ON CONNECTORS	86
Q606 REMOVE OR INSTALL LIGHTS OR BULBS	86
F183 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSORS (MPP)	84
E147 TAG SERVICEABLE OR UNSERVICEABLE EQUIPMENT	84
Q582 REMOVE OR INSTALL COAXIAL CABLES	84
Q556 TIGHTEN BOLTS OR NUTS TO SPECIFIED TORQUE VALUES	84
F184 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	84
Q554 SOLDER ELECTRICAL CONNECTIONS	84
Q537 LOAD PAPER ON PRINTER EQUIPMENT	84
G223 TROUBLESHOOT MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	84
G224 TROUBLESHOOT MINUTEMAN POWER PROCESSORS (MPP)	82
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	80
Q585 REMOVE OR INSTALL CONNECTORS OR CONNECTOR PINS	80
Q613 REMOVE OR INSTALL MINOR HARDWARE, SUCH AS HINGES OR KNOBS	80
F189 PERFORM CHECKOUTS OF PP-3030A OR PP-3030B/GSW-4 POWER SUPPLIES	80
E112 INVENTORY TOOLS	79
Q597 REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	79
Q555 STRIP WIRES	79
F162 PERFORM CHECKOUTS OF AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	79
Q629 REMOVE OR INSTALL SHRINK TUBING	79
G228 TROUBLESHOOT PP-3030A OR PP-3030B/GSW-4 POWER SUPPLIES	79
G202 TROUBLESHOOT AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	79
Q576 REMOVE OR INSTALL BATTERIES IN MISSILE GUIDANCE CONTROL SECTIONS	77
E126 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) REQUESTIONS FOR SUPPLIES OR EQUIPMENT	77
Q517 CLEAN ELECTRONIC EQUIPMENT	77
F163 PERFORM CHECKOUTS OF AN/GSQ-96 CODE CHANGE-VERIFIER SETS	77
Q603 REMOVE OR INSTALL INTERFACE CABLES	75
Q553 SAFETY-WIRE EQUIPMENT	75
F170 PERFORM CHECKOUTS OF CODE INSERTER-VERIFIER SETS	75

TABLE 9

TASKS PERFORMED BY 58 PERCENT OR MORE OF  
31672G PERSONNEL

TASKS	PERCENT MEMBERS PERFORMING
C56 OBSERVE PERSONNEL PERFORMING MAINTENANCE	79
D93 PREPARE AF FORMS 623 (ON-THE-JOB TRAINING RECORD)	79
B22 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	79
E154 WRITE CORRESPONDENCE	75
E115 LOCATE INFORMATION IN TECHNICAL OR SUPPLY PUBLICATIONS	75
B23 COUNSEL SUBORDINATES ON JOB PROGRESSION OR CAREER DEVELOPMENT	75
E138 REVIEW CORRESPONDENCE	71
C63 PREPARE APR	71
E110 INVENTORY EQUIPMENT	71
B24 DIRECT DEVELOPMENT OR MAINTENANCE OF STATUS BOARDS, GRAPHS, OR CHARTS	71
E140 REVIEW MAINTENANCE OR INSPECTION REPORTS	67
E144 REVIEW STATUS OF AWAITING PARTS (AWP) ITEMS	67
B32 INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	67
A13 PLAN BRIEFINGS	67
D78 COUNSEL TRAINEES ON TRAINING PROGRESS	67
E112 INVENTORY TOOLS	67
C68 REVIEW PROPOSED TECHNICAL DATA CHANGES	63
D94 PREPARE JOB QUALIFICATION STANDARDS	63
D88 EVALUATE PERSONNEL FOR NEED OF TRAINING	63
A5 DETERMINE WORK PRIORITIES	63
D86 EVALUATE EFFECTIVENESS OF TRAINING PROGRAMS	63
A3 COORDINATE ACTIVITIES OF SPECIALISTS	63
C53 INDORSE AIRMAN PERFORMANCE REPORTS (APR)	63
E116 MAINTAIN CLASSIFIED EQUIPMENT STORAGE AREAS	63
E114 ISSUE, SIGN FOR, OR TURN IN CLASSIFIED EQUIPMENT	63
D75 CONDUCT ORIENTATION OF NEWLY ASSIGNED PERSONNEL	63
E130 PREPARE DD FORMS 1348-6 (NON-NSN REQUISITION (MANUAL))	63
E105 EDIT AND REVIEW AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	58
A17 PLAN WORK ASSIGNMENTS	58
E103 COORDINATE SUPPLY REQUESTS WITH BASE OR WING SUPPLY	58

personnel, in terms of both the type of tasks performed and the relative amount time spent on those tasks. The jobs performed by 3- and 5-skill level personnel tend to be more directly maintenance-related, while 7-skill level personnel are almost exclusively involved in supervisory, managerial, and administrative jobs. To more clearly show the differences between skill levels, Table 10 lists representative tasks characteristic of AFSC 31632G/52G and 31672G personnel.

#### ANALYSIS OF AFR 39-1 SPECIALTY DESCRIPTIONS

To verify the completeness and accuracy of the AFSC 411XOA specialty descriptions, survey data were compared to both the January 1982 AFR 39-1 Specialty Descriptions for AFSC 316X2G and to the April 1985 AFR 39-1 Specialty Descriptions for AFSC 411XOA. Although now outdated, the comparison to the 316X2G specialty descriptions offers a view of these personnel before their merger with AFSC 316X0G personnel to form AFSC 411XOA. In either case, these descriptions are intended to give a broad overview of the duties and tasks performed in each skill level of the specialty.

Both of the 3- and 5-skill level descriptions appear to be complete and accurately display the highly maintenance-related, as well as the limited supervisory nature of the job.

The 7-skill level descriptions generally are accurate, portraying both the maintenance-related and supervisory aspects of the job. The emphasis placed on each aspect, however, appears to be inaccurate and warrants review. For example, both specialty descriptions portray 7-skill level personnel performing a significant number of day-to-day maintenance tasks (see paragraphs 2a and 2b of the AFSC 316X2G specialty description and paragraph 2b of the AFSC 411XOA specialty description); involvement in supervisory-related functions appears to be secondary to these maintenance responsibilities. As shown in Table 11, however, the opposite seems to be true. While no day-to-day maintenance task is performed by over 25 percent of the 7-skill level population, those tasks representative of supervisory-related operations are performed by as many as 79 percent of 7-skill level personnel. This emphasis on supervisory-related operations was also identified earlier in the ANALYSIS OF DAFSC GROUPS section, with 7-skill level members spending an overwhelming majority of their job time (81 percent) on supervisory-related duties and only 19 percent of their time on maintenance operations (see Table 7). Overall, these data suggest that AFSC 316X2G 7-skill level personnel are primarily supervisors, managers, and administrators who are only involved in day-to-day maintenance tasks on a limited basis. Thus, it appears that the E-LAB (former AFSC 316X2G) responsibilities in the 7-skill level specialty description for AFSC 411XOA should be considered for adjustments in future updates of the description to more accurately reflect the predominantly supervisory nature of the job.

TABLE 10  
REPRESENTATIVE TASK DIFFERENCES BETWEEN 31632G/52G  
AND 31672G PERSONNEL  
(PERCENT MEMBERS PERFORMING)

<u>TASKS</u>	<u>DAFSC 31632G/52G</u>	<u>DAFSC 31672G</u>	<u>DIFFERENCE</u>
G224 TROUBLESHOOT MINUTEMAN POWER PROCESSORS (MPP)	82	13	+69
F184 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB) / POWER SYSTEM VERIFICATION BOXES (PSVB)	84	17	+67
Q613 REMOVE OR INSTALL MINOR HARDWARE, SUCH AS HINGES OR KNOBS	80	17	+63
G228 TROUBLESHOOT PP-3030A OR PP-3030B/GSW-4 POWER SUPPLIES	79	17	+62
Q593 REMOVE OR INSTALL CONNECTORS OR CONNECTOR PINS	80	21	+60
0554 SOLDER ELECTRICAL CONNECTIONS	84	25	+59
Q582 REMOVE OR INSTALL COAXIAL CABLES	84	25	+59
F162 PERFORM CHECKOUTS OF AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	79	21	+58
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	80	25	+55
H237 ADJUST AN/GSQ-96 CODE CHANGE-VERIFIER SETS	66	13	+53
<hr/>			
E154 WRITE CORRESPONDENCE	18	75	-57
D93 PREPARE AF FORMS 623 (ON-THE-JOB TRAINING RECORD)	25	79	-54
C53 INDORSE APRs	11	63	-52
B23 COUNSEL SUBORDINATES ON JOB PROGRESSION OR CAREER DEVELOPMENT	25	75	-50
E139 REVIEW JOB DESCRIPTIONS	9	58	-49
A20 SCHEDULE LEAVE OR PASSES	14	58	-44
C63 PREPARE APRs	27	71	-44
C68 REVIEW PROPOSED TECHNICAL DATA CHANGES	20	63	-43

TABLE 11

SELECTED TASK DATA RELATING TO SUPERVISORY/ADMINISTRATIVE  
AND MAINTENANCE OPERATIONS FOR DAFSC 31672G PERSONNEL  
(PERCENT MEMBERS PERFORMING)

<u>SELECTED REPRESENTATIVE TASKS</u>	<u>DAFSC 31672G (N=24)</u>
<b>(SUPERVISORY/ADMINISTRATIVE OPERATIONS)</b>	
C56 OBSERVE PERSONNEL PERFORMING MAINTENANCE	79
D93 PREPARE AF FORMS 623 (ON-THE-JOB TRAINING RECORD)	79
B23 COUNSEL SUBORDINATES ON JOB PROGRESSION OR CAREER DEVELOPMENT	75
E154 WRITE CORRESPONDENCE	75
C63 PREPARE APRs	71
A5 DETERMINE WORK PRIORITIES	63
C68 REVIEW PROPOSED TECHNICAL DATA CHANGES	63
E103 COORDINATE SUPPLY REQUESTS WITH BASE OR WING SUPPLY	58
D83 DIRECT OR IMPLEMENT OJT PROGRAMS	54
A2 ASSIGN SPONSORS FOR NEWLY ASSIGNED PERSONNEL	54
C41 EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	50
 ----- <b>(MAINTENANCE OPERATIONS)</b>	
Q594 REMOVE OR INSTALL ELECTRONIC EQUIPMENT DRAWERS	25
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	25
0535 INSTALL TEST EQUIPMENT	25
Q582 REMOVE OR INSTALL COAXIAL CABLES	25
F196 PERFORM CHECKOUTS OF UNITS OF AN/GSM-235 ELECTRONIC SYSTEMS TEST SETS	21
0511 ADJUST POTENTIOMETERS	21
G226 TROUBLESHOOT MX-91115/G KEYBOARD PRINTER SETS	21
Q635 REMOVE OR INSTALL TEST JACKS	17
H258 CALIBRATE UNITS OF AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	17
Q573 REMOVE OR INSTALL ACCESS COVERS OR PLATES	17

## ANALYSIS OF TAFMS GROUPS

An analysis of total active federal military service (TAFMS) groups provides a description of how jobs within a career ladder change over time. As is typical in most career ladders, as time in service for AFSC 316X2G personnel increased, there was a corresponding increase in the performance of duties involving supervisory and managerial tasks (see Table 12). As time spent in these duties increased, performance time on maintenance-related tasks generally declined. Through the third enlistment (97-144 months) the job remained fairly technical, with 57 percent of the relative job time spent on maintenance-related duties. Note that duty time related to system-specific maintenance was concentrated on the WS-133A systems (Duties I, J, and K), reflecting the fact that a greater number of Minuteman missiles carry the WS-133AM and WS-133AM/CDB missile weapon systems than the WS-133B/CDB missile weapon system. Thus, more personnel are assigned to maintain these systems. It was not until the fourth enlistment (145-192 months) that supervisory-related functions accounted for the vast majority of the respondents' job time (91 percent). This trend corresponds with the findings mentioned for the 7-skill group in the ANALYSIS OF DAFSC GROUPS.

### First-Enlistment Personnel

In this study, there are 28 members in their first enlistment (1-48 months TAFMS), representing slightly over one-third (35 percent) of the survey sample. Distribution of these personnel across career ladder jobs is displayed in Figure 2, which shows the majority of AFSC 316X2G first-term personnel are involved in day-to-day maintenance-related activities; only 4 percent are involved in quality control functions; none are involved in supervisory-related functions. The highly maintenance-oriented nature of their job is further highlighted in Table 12; 81 percent of their job time is spent maintaining missile and missile weapon system equipment.

Contrasting the job performance of first-enlistment personnel across weapon systems showed no substantial differences in the majority of the tasks they perform. While some system-specific differences among the group were noted, it is interesting to note that only 20 percent of the job time for these first-enlistment personnel is devoted to system-specific maintenance (see Duties I through N). Most of their time (71 percent) is spent maintaining equipment common to WS-133 systems, performing general maintenance on missile equipment, removing and installing missile equipment, and performing administrative tasks associated with these maintenance functions. In fact, nearly 50 percent of their time is spent performing 97 tasks, only 8 of which involve maintenance specifically on the WS-133AM, WS-133AM/CDB, or WS-133B/CDB missile weapon systems. Some of these tasks are listed in Table 13. Since the first-enlistment group is the target for ABR training programs, these tasks are highlighted to provide a foundation for examining specialty entry-level training.

TABLE 12  
RELATIVE TIME SPENT ON DUTIES BY TAFMS GROUPS

DUTIES	MONTHS TAFMS				
	1-48 (N=28)	49-96 (N=23)	97-144 (N=13)	145-192 (N=7)	193-240 (N=8)
A. ORGANIZING AND PLANNING	*	*	4	12	10
B. DIRECTING AND IMPLEMENTING	*	1	5	14	12
C. INSPECTING AND EVALUATING	6	17	7	14	26
D. TRAINING	*	3	11	15	11
E. PERFORMING MAINTENANCE ADMINISTRATION FUNCTIONS	10	10	16	36	29
F. PERFORMING CHECKOUTS AND INSPECTIONS OF EQUIPMENT COMMON TO WS-133 SYSTEMS	13	9	7	*	2
G. TROUBLESHOOTING EQUIPMENT COMMON TO WS-133 SYSTEMS	8	7	5	*	1
H. CALIBRATING AND ADJUSTING EQUIPMENT COMMON TO WS-133 SYSTEMS	4	3	3	*	*
I. PERFORMING CHECKOUTS AND SELF-TESTS OF WS-133A EQUIPMENT	8	7	7	*	1
J. TROUBLESHOOTING WS-133A EQUIPMENT	5	5	5	*	*
K. CALIBRATING AND ADJUSTING WS-133A EQUIPMENT	2	2	3	*	*
L. PERFORMING CHECKOUTS AND SELF-TESTS OF WS-133B EQUIPMENT	3	4	3	*	*
M. TROUBLESHOOTING WS-133B EQUIPMENT	2	2	2	*	*
N. CALIBRATING AND ADJUSTING WS-133B EQUIPMENT	*	*	*	*	*
O. PERFORMING GENERAL MAINTENANCE ON MISSILE EQUIPMENT	13	8	8	2	1
P. PERFORMING GENERAL SHOP MAINTENANCE	4	3	2	1	2
Q. REMOVING OR INSTALLING MISSILE EQUIPMENT	19	14	11	2	2

\*Less than 1 percent

## DISTRIBUTION OF FIRST-ENLISTMENT PERSONNEL ACROSS SPECIALTY JOB GROUPS

( PERCENT MEMBERS PERFORMING )

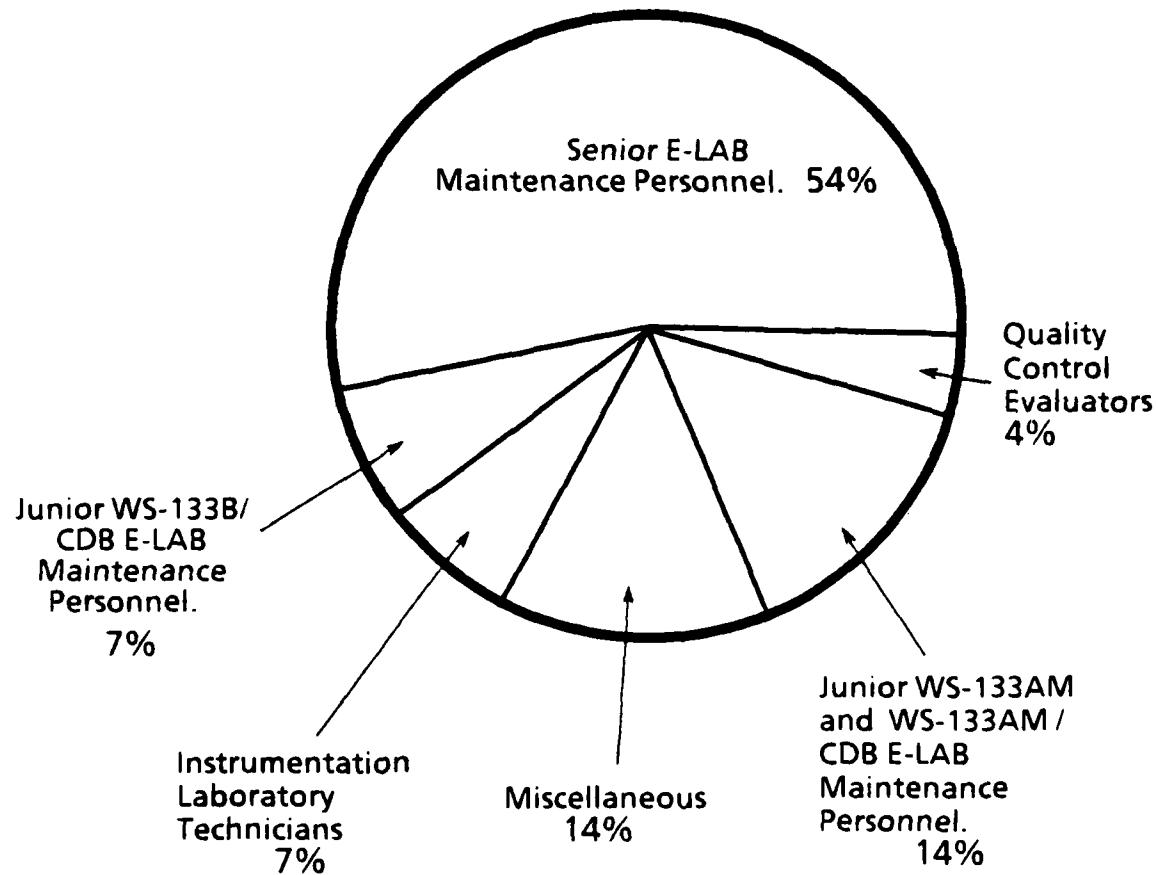


Figure 2

TABLE 13  
REPRESENTATIVE TASKS PERFORMED BY FIRST ENLISTMENT PERSONNEL\*

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING (N=28)</u>
0556 TIGHTEN BOLTS OR NUTS TO SPECIFIED TORQUE VALUES	89
Q593 REMOVE OR INSTALL DUST CAPS ON CONNECTORS	86
E147 TAG SERVICEABLE OR UNSERVICEABLE EQUIPMENT	86
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	86
F183 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSORS (MPP)	82
G223 TROUBLESHOOT MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	82
F163 PERFORM CHECKOUTS OF AN/GSQ-96 CODE CHANGE-VERIFIER SETS	79
F189 PERFORM CHECKOUTS OF PP-3030A OR PP-3030B/GSW-4 POWER SUPPLIES	79
Q603 REMOVE OR INSTALL INTERFACE CABLES	75
0553 SAFETY-WIRE EQUIPMENT	75
F162 PERFORM CHECKOUTS OF AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	75
E126 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) REQUISITIONS FOR SUPPLIES OR EQUIPMENT	71
E112 INVENTORY TOOLS	
0517 WRAP OR UNWRAP SOLDERLESS WIRE CONNECTIONS	71
F187 PERFORM CHECKOUTS OF MX-9115/G KEYBOARD PRINTER SETS	68
Q635 REMOVE OR INSTALL TEST JACKS	68
E136 PROCESS NOT REPARABLE THIS STATION (NRTS) EQUIPMENT	64
0535 INSTALL TEST EQUIPMENT	64
H237 ADJUST AN/GSQ-96 CODE CHANGE-VERIFIER SETS	64
J342 TROUBLESHOOT AN/GSM-260 GUIDED MISSILE SYSTEM TEST STATIONS	61
0545 PERFORM HIGH RELIABILITY SOLDERING	61
G230 TROUBLESHOOT RFI FILTER UNITS	61
F173 PERFORM CHECKOUTS OF ELECTRICAL CABLE TEST SETS	54
Q609 REMOVE OR INSTALL MECHANICAL COMPONENTS OF ELECTRONIC EQUIPMENT	54
E107 INITIATE OR ANNOTATE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	50
Q573 REMOVE OR INSTALL ACCESS COVERS OR PLATES	50
I293 PERFORM CHECKOUTS OF FAULT LOCATING INDICATORS (ID-2288)	50

\*Average number of tasks performed: 163

### Job Satisfaction

TAFMS group perceptions of their jobs, together with similar data for comparative groups, can give career ladder managers a better understanding of some of the factors which may affect the job performance of airmen in the career ladder. These perceptions were captured by including five job satisfaction questions in the survey instrument covering job interest, perceived utilization of talents and training, sense of accomplishment from the work, and reenlistment intentions. Table 14 presents these data for AFSC 316X2G TAFMS groups and for a comparative sample of Mission Equipment Maintenance career ladders surveyed in 1984.

Comparisons of the group responses reflect that job satisfaction indicators pertaining to job interest, perceived use of talents and training, and sense of accomplishment from work generally were higher than those same indicators for the comparative sample. While a higher percentage of AFSC 316X2G first-enlistment personnel (1-48 months TAFMS) responded positively in all of these areas, only a few exceptions were noted among the second-enlistment (49-96 months TAFMS) and career (97+ months TAFMS) personnel groups. For all TAFMS groups, however, the percentages planning to reenlist were considerably lower than those expressed by the comparative sample, particularly in the case of the first-enlistment personnel. This may be because AFSC 316X2G personnel have developed electronic skills which can easily be transferred to the civilian sector.

### TRAINING ANALYSIS

Occupational survey data are one of the many sources of information which can be used to assist in the development of a training program relevant to the needs of personnel in their first enlistment. Factors used in evaluating training include the overall description of the job being performed by first-enlistment personnel, the percentage of first-enlistment personnel performing specific tasks or using certain equipment, and training emphasis and task difficulty ratings (previously explained in the SURVEY METHODOLOGY section).

To assist specifically in the evaluation of the Specialty Training Standard (STS) and Plans of Instruction (POI), technical school personnel from Chanute Technical Training Center matched job inventory tasks to appropriate sections and subsections of the tentative STS for AFSC 411XOA (which combines former AFSC 316X0G and AFSC 316X2G responsibilities) and the POIs for courses C3ABR31632G-001 and C3ABR31632G-002. It was this task matching upon which comparisons to those documents was based. A complete computer listing displaying the percent members performing tasks, training emphasis and task difficulty ratings for each task, along with the STS and POI matchings, has been forwarded to the technical school for their use in further detailed review of training documents. A summary of this information is presented below.

TABLE 14

COMPARISON OF JOB SATISFACTION INDICATORS BY TAFMS GROUPS  
(PERCENT MEMBERS RESPONDING)\*

	1-48 MOS TAFMS			49-96 MOS TAFMS			97+ MOS TAFMS		
	COMP	SAMPLE**	316X2G (N=28)	COMP	SAMPLE**	316X2G (N=23)	COMP	SAMPLE**	316X2G (N=29)
<u>EXPRESSED JOB INTEREST:</u>									
INTERESTING	79	72	61	70	83	74	74	75	75
SO-SO	21	17	26	18	10	15	15	15	15
DULL	0	11	9	11	7	9	7	9	9
<u>PERCEIVED USE OF TALENTS:</u>									
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	89	77	78	77	86	80	80	80	80
	11	23	17	23	10	19	19	19	19
<u>PERCEIVED USE OF TRAINING:</u>									
FAIRLY WELL TO PERFECTLY LITTLE OR NOT AT ALL	93	79	91	78	72	78	78	78	78
	7	21	4	22	28	28	28	28	28
<u>SENSE OF ACCOMPLISHMENT FROM JOB:</u>									
SATISFIED	75	70	57	65	62	68	68	68	68
NEUTRAL	14	13	13	14	3	11	11	11	11
DISSATISFIED	11	16	26	20	35	20	20	20	20
<u>REENLISTMENT INTENTIONS:</u>									
WILL RETIRE YES, OR PROBABLY YES	39	60	57	74	62	76	76	76	76
NO, OR PROBABLY NO	61	40	39	23	14	8	8	8	8
***Less than 1 percent									

\*Columns may not add to 100 percent due to nonresponse or rounding  
\*\*Comparative sample of Mission Equipment Maintenance career ladders surveyed in 1984  
(Includes AFSCs 321XX, 322XX, 328XX, 404X1, 423XX, 427X5, and 461X0)

### Training Emphasis and Task Difficulty Data

Training emphasis (TE) and task difficulty (TD) data are secondary factors that can assist technical school personnel in deciding what tasks should be emphasized in entry-level training. These ratings, based on the judgments of senior career ladder NCOs, are collected to provide training personnel with a rank-ordering of those tasks considered important for first-term airman training (TE), along with a measure of the difficulty of those tasks (TD). When combined with data on the percentages of first-enlistment personnel performing tasks, comparisons can then be made to determine if training adjustments are necessary. For example, tasks receiving high ratings on both task factors, accompanied by moderate to high percentages performing, may warrant resident training. Those tasks receiving high task factor ratings, but low percentages performing, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best left out of training for first-enlistment personnel, but this decision must be weighed against percentages of personnel performing the tasks, command concerns, and criticality of the tasks. Various lists of tasks, accompanied by TE and TD ratings, are contained in the Training Extract package and should be reviewed in detail by technical school personnel. (For a more detailed explanation of TE and TD ratings, see Task Factor Administration in the SURVEY METHODOLOGY section of this report).

### Specialty Training Standard (STS)

A comprehensive review of tentative STS 411XOA compared STS items to survey data. Paragraphs containing general information or knowledge areas, as well as those paragraphs dealing specifically with former AFSC 316X0G responsibilities (paragraphs 12 through 24), were not evaluated. Since the matching of the tentative STS by technical school personnel, a final STS for AFSC 411XOA (dated April 1985) has been published. A careful review of this STS revealed no substantial changes in content from the tentative STS. Thus, the original matching to the tentative STS should assist technical school personnel in evaluating the final STS for AFSC 411XOA.

In evaluating how well the survey data supported STS paragraphs or subparagraphs, all applicable paragraphs of the STS were first reviewed to determine if they were supported by the total sample of AFSC 316X2G personnel, including first-enlistment, 5-skill level, and 7-skill level groups. Those paragraphs identified as not supported by these total sample groups were then reviewed to determine if they covered equipment peculiar to a specific missile weapon system (WS-133AM and WS-133AM/CDB or WS-133B/CDB) or equipment common to the WS-133 missile weapon systems. Those paragraphs identified as covering equipment peculiar to a specific missile weapon system were then evaluated based on responses from personnel working on that particular system. For example, STS paragraphs pertaining to WS-133AM or WS-133AM/CDB missile weapon system equipment were evaluated based on responses from first-enlistment and 5-skill level personnel working on those systems, while STS paragraphs pertaining to WS-133B/CDB equipment were evaluated based on responses from 5-skill level personnel working on that system. (First-enlistment data could not be used alone due to the low number of first-term WS-133B/CDB personnel

responding to the survey.) This two-part review resulted in the identification of several STS paragraphs that were not supported by the survey data. (A complete listing of these paragraphs is included in Appendix B.) Many of these paragraphs cover the use of 494L equipment (peculiar to Whiteman AFB); other paragraphs deal specifically with WS-133B/CDB equipment, including the LCC power subsystem, LF battery charger sets, and MF radio subsystems. In addition to not being supported by percentages of personnel performing, tasks matched to these paragraphs also had very low training emphasis ratings, indicating senior career ladder NCOs did not feel these tasks were as important as other tasks for first-enlistment training. Training specialists and subject-matter experts should review these paragraphs in detail to determine if criticality, safety, or some other consideration requires that they remain in the STS.

A second area of analysis involved examining tasks not matched to any paragraphs in the STS. Unreferenced tasks performed by at least 20 percent of a group, such as first-enlistment personnel, are performed to an extent great enough to be included in the STS. Examples of unmatched tasks meeting this criterion for the total sample of AFSC 316X2G personnel are displayed in Table 15. Overall, approximately 100 tasks were not matched to the STS. While several of these tasks pertain to maintenance and administrative functions, over half of these tasks highlight supervision and training functions. This is probably due to the limited nature of the Supervision and Training paragraph (paragraph 9) in the current STS. Training personnel should thoroughly review these tasks to identify possible areas for inclusion in this STS paragraph. In addition to these tasks, approximately 20 unmatched tasks specific to a particular missile weapon system were also identified that could be considered for inclusion in the STS based on percentages of personnel performing them who maintain those systems. Examples of these tasks include performing checkouts and adjusting OG-38A/GSW-10 amplifier-frequency multiplier groups (WS-133A systems) and performing self-tests of AN/GSM-135 electrical power test sets (WS-133B/CDB system). Training personnel should carefully review the complete computer-generated listing of unreferenced tasks to determine which areas might be appropriate for inclusion in future revisions of the STS.

#### Plan of Instruction (POI)

A similar match of the survey data to the POIs for Courses C3ABR31632G-001 and C3ABR31632G-002 shows these documents generally are well supported, but several tasks are not matched to blocks of instruction in the POIs. Based on previously mentioned assistance from technical school personnel in matching inventory tasks to the POIs, computer products displaying the results of the matching process were generated. Information contained in these products includes percent members performing data by missile weapon system for first-enlistment (1-48 months TAFMS) and 5-skill level personnel, as well as training emphasis (TE) and task difficulty (TD) ratings.

At the time of the POI matchings by technical school personnel, individuals entering the AFSC 316X2G career ladder attended either Course C3ABR31632G-001 or Course C3ABR31632G-002. Training in Course -001 covered inspection and maintenance of WS-133AM and WS-133AM/CDB missile weapon system

TABLE 15

EXAMPLES OF TASKS PERFORMED BY 20 PERCENT OR MORE GROUP MEMBERS  
AND NOT REFERENCED TO THE STS

TASKS	TNG EMP*	1ST ENL	DAFSC 316526	DAFSC 316726	TASK DIFF**
E126 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) REQUISITIONS FOR SUPPLIES OR EQUIPMENT	3.53	71	74	54	4.36
G222 TROUBLESHOOT MAINTENANCE TEST SETS (SMSB)	2.07	36	43	17	5.70
F161 PERFORM CHECKOUTS OF AN/GSM-155 TEST ADAPTERS	1.87	50	51	17	5.00
G212 TROUBLESHOOT CODE INSERTER-VERIFIER SETS SHIELDED ENCLOSURES	1.80	61	65	13	4.92
H256 CALIBRATE UNITS OF AN/GSM-234 MEMORY CONTROLLER GROUP TEST SETS	1.80	39	51	13	5.80
K421 CALIBRATE FAULT LOCATING INDICATORS (ID-2288)	1.40	36	43	8	4.72
I260 CONFIGURE AND CHECKOUT ELECTRONIC EQUIPMENT FOR SIMULATED ELECTRONIC LAUNCH MINUTEMAN (SELM) TESTS	1.27	25	39	4	4.48
F194 PERFORM CHECKOUTS OF UNITS OF AN/GSM-230 MEMORY CONTROLLERS	1.13	25	33	8	5.39
E136 PROCESS NOT REPARABLE THIS STATION (NRTS) EQUIPMENT	1.00	64	71	33	4.06
G204 TROUBLESHOOT AN/GSM-94 CONNECTOR ADAPTER SETS	.87	64	69	13	3.87
F179 PERFORM CHECKOUTS OF LAUNCH ENABLE CONTROL GROUPS	.80	18	35	8	4.99
G201 TROUBLESHOOT AN/GSM-155 TEST ADAPTERS	.80	54	59	17	4.66
G203 TROUBLESHOOT AN/GSM-85 CONNECTOR ADAPTER SETS	.80	43	49	8	3.52
I314 PERFORM CHECKOUTS OF UNITS OF COMMAND MESSAGE PROCESSING GROUPS					
F173 PERFORM CHECKOUTS OF ELECTRICAL CABLE TEST SETS	.80	21	37	8	5.03
E127 PREPARE AF FORMS 302 (ROOM OR AREA SECURITY INSPECTION RECORD)	.73	54	63	13	4.20
J378 TROUBLESHOOT RECEIVER TRANSMITTER DRAWERS OTHER THAN RT-637	.67	32	47	58	3.38
I291 PERFORM CHECKOUTS OF DATA ANALYSIS CENTRAL TEST SETS	.60	29	39	17	5.40
L445 PERFORM CHECKOUTS OF FAULT LOCATOR INDICATOR PANELS	.33	39	33	0	5.46
				31	4
					4.96

\*Average TE rating is 1.10 and Standard Deviation is 1.17

\*\*Average TD rating is 5.00

equipment, while training in Course -002 covered these same areas for WS-133B/CDB missile weapon system equipment. With the April 1985 merger of AFSCs 316X0G and 316X2G, the 316X2G ABR courses were renumbered and converted to AZR courses for AFSC 411X0A, (C3AZR41150A-000 and C3AZR41150A-001, respectively), while the 316X0G ABR courses were renumbered and became the new ABR courses for AFSC 411X0A. Personnel attending the AFSC 411X0A AZR courses must have a minimum of 3 years field experience in AFSCs 316X0G or AFSC 411X0A. A careful review of the POIs for Courses C3AZR41150A-000 and C3AZR41150A-001 revealed no substantial changes in content from the former AFSC 316X2G ABR POIs. Thus, the original POI matchings completed by technical school personnel should be useful in evaluating training documents for the new AFSC 411X0A career ladder.

For this occupational survey report, POI C3ABR31632G-001 was evaluated based on the percent of WS-133AM and WS-133AM/CDB first-enlistment personnel performing the matched tasks, while POI C3ABR31632G-002 was evaluated based on the percent of WS-133B/CDB 5-skill level personnel performing the matched tasks. (First-enlistment data could not be used alone to evaluate POI -002 due to the low number of first-term WS-133B/CDB personnel responding to the survey (N=2).) Technical school personnel are encouraged to use data from these same categories of personnel in their evaluation of the 411X0A AZR POIs.

POI C3ABR31632G-001. Analysis shows that all POI blocks and units of instruction are well supported by the survey data (based on percentages of WS-133AM and WS-133AM/CDB first-enlistment personnel performing tasks or high TE or TD ratings for pertinent tasks). There are, however, approximately 40 tasks with high TE ratings and 30 percent or more first-term personnel performing that were not matched to any POI blocks of instruction (see Table 16). This combination of factors indicates formal training may be required and resident technical training could be supported. Many of these tasks involve maintenance on equipment common to the WS-133 missile weapon systems, including AN/GSQ-96 code change-verifier sets, Minuteman Power Processors (MPP), and Minuteman Power Processor Verification Boxes (MPPVB)/Power System Verification Boxes (PSVB). Training personnel should perform an in-depth review of these tasks to determine if they should be included in the common portion of the AFSC 411X0A AZR POIs (Blocks I and II).

POI C3ABR31632G-002. Analysis shows that all POI blocks and units of instruction are well supported by percentages of WS-133B/CDB 5-skill level personnel performing the matched tasks. As with POI -001, however, there are approximately 50 tasks with over 30 percent of these personnel performing and high TE ratings that were not matched to any POI blocks of instruction (see Table 17). With the exception of a few system-specific tasks, most of these tasks involve maintenance of equipment common to the WS-133 missile weapon systems, and are identical to the unmatched tasks listed in Table 16 for the WS-133AM and WS-133AM/CDB POI. These data tend to support the recommendation for including these equipment areas in the common portion of the AFSC 411X0A AZR POIs. Again, training personnel are encouraged to review these listings of tasks to determine the necessity for training and the most effective method to accomplish it.

TABLE 16

TASKS NOT REFERENCED TO POI C3ABR31632G-001 WITH HIGH  
TE AND OVER 30 PERCENT PERFORMING

TASKS	TNG EMP*	WS-133AM AND WS-133AM/CDB 1ST ENL	TASK DIFF**
F170 PERFORM CHECKOUTS OF CODE INSERTER-VERIFIER SETS	5.80	80	6.52
G211 TROUBLESHOOT CODE INSERTER-VERIFIER SETS	5.27	80	6.65
F163 PERFORM CHECKOUTS OF AN/GSQ-96 CODE CHANGE-VERIFIER SETS	4.07	87	5.90
Q585 REMOVE OR INSTALL CONNECTORS OR CONNECTOR PINS	4.00	80	5.39
F183 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSORS (MPP)	3.47	93	4.40
F169 PERFORM CHECKOUTS OF CODE INSERTER-VERIFIER SETS SHIELDED ENCLOSURES	3.40	67	5.81
0545 PERFORM HIGH RELIABILITY SOLDERING	3.27	53	5.40
F166 PERFORM CHECKOUTS OF C-631A MAGNETIC TAPE TRANSPORTS	3.20	100	4.68
F184 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	3.20	100	4.62
G205 TROUBLESHOOT AN/GSQ-96 CODE CHANGE-VERIFIER SETS	3.00	80	5.90
J360 TROUBLESHOOT GSW-13 PROGRAMMER GROUPS USING AN/GSM-82	3.00	47	5.52
F182 PERFORM CHECKOUTS OF MINUTEMAN GUIDANCE SECTION LIQUID COOLER TEST SETS	2.93	73	5.51
H237 ADJUST AN/GSQ-96 CODE CHANGE-VERIFIER SETS	2.67	73	4.86
H249 CALIBRATE AN/GSQ-96 CODE CHANGE-VERIFIER SETS	2.67	67	5.70
F192 PERFORM CHECKOUTS OF RP-131/G TAPE TRANSPORTS	2.53	80	4.77
G223 TROUBLESHOOT MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	2.53	100	5.38
K417 CALIBRATE AN/GSM-104 SECURITY SYSTEM ELECTRONIC CIRCUIT PLUG-IN TEST SETS	2.53	40	5.99
J383 TROUBLESHOOT TS-36557/GSQ ELECTRONIC CIRCUIT PLUG-IN UNIT TEST SETS	2.47	40	6.17
F191 PERFORM CHECKOUTS OF RFI FILTER UNITS	2.33	100	4.50
H241 ADJUST MINUTEMAN GUIDANCE SECTION LIQUID COOLER TEST SETS	2.27	53	5.22

\*Average TE rating is 1.10 and Standard Deviation is 1.17  
(High TE = 2.27)

\*\*Average TD rating is 5.00

TABLE 17

TASKS NOT REFERENCED TO POI C3ABR31632G-002 WITH HIGH  
TE AND OVER 30 PERCENT PERFORMING

TASKS	TNG EMP*	WS-133B/CDB DAFSC 31652G	TASK DIFF**
F170 PERFORM CHECKOUTS OF CODE INSERTER-VERIFIER SETS	5.80	100	6.52
G211 TROUBLESHOOT CODE INSERTER-VERIFIER SETS	5.27	100	6.65
F163 PERFORM CHECKOUTS OF AN/GSQ-96 CODE CHANGE-VERIFIER SETS	4.07	100	5.90
Q585 REMOVE OR INSTALL CONNECTORS OR CONNECTOR PINS	4.00	86	5.39
F197 PERFORM MISSILE GUIDANCE SET (MGS) TO R/S INTERFACE CABLE CHECKOUTS	3.67	100	4.88
F183 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSORS (MPP)	3.47	100	4.40
F169 PERFORM CHECKOUTS OF CODE INSERTER-VERIFIER SETS SHIELDED ENCLOSURES	3.40	100	5.81
0545 PERFORM HIGH RELIABILITY SOLDERING	3.27	75	5.40
F166 PERFORM CHECKOUTS OF C-631A MAGNETIC TAPE TRANSPORTS	3.20	75	4.68
F184 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB) / POWER SYSTEM VERIFICATION BOXES (PSVB)	3.20	100	4.62
G205 TROUBLESHOOT AN/GSQ-96 CODE CHANGE-VERIFIER SETS	3.00	100	5.90
F182 PERFORM CHECKOUTS OF MINUTEMAN GUIDANCE SECTION LIQUID COOLER TEST SETS	2.93	88	5.51
H237 ADJUST AN/GSQ-96 CODE CHANGE-VERIFIER SETS	2.67	88	4.86
H249 CALIBRATE AN/GSQ-96 CODE CHANGE-VERIFIER SETS	2.67	88	5.70
L463 PERFORM SELF-TESTS OF AN/GSM-136 POWER SUPPLY TEST SETS	2.60	75	5.67
F192 PERFORM CHECKOUTS OF RP-131/G TAPE TRANSPORTS	2.53	63	4.77
G223 TROUBLESHOOT MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB) / POWER SYSTEM VERIFICATION BOXES (PSVB)	2.53	100	5.38
F191 PERFORM CHECKOUTS OF RFI FILTER UNITS	2.33	100	4.50
L426 INSPECT NS-20 MISSILE GUIDANCE SYSTEMS (MGS)	2.33	88	4.33
H241 ADJUST MINUTEMAN GUIDANCE SECTION LIQUID COOLER TEST SETS	2.27	63	5.22
M475 TROUBLESHOOT DIGITAL DATA COMPUTERS TYPE 1218	2.27	63	7.16

\*Average TE rating is 1.10 and standard deviation is 1.17  
(High TE = 2.27)

\*\*Average TD rating is 5.00

One additional consideration training personnel may want to explore involves combining the two separate AFSC 411XOA AZR courses into a single course covering principles of both the WS-133A and WS-133B/CDB missile weapon systems. As was discussed previously in the ANALYSIS OF TAFMS GROUPS, the overall description of the job performed by AFSC 316X2G (AFSC 411XOA) first-enlistment personnel revealed that over 70 percent of their total job time was devoted to maintenance of equipment common to the WS-133 systems, performing general maintenance on missile equipment, removing and installing missile equipment, and performing administrative tasks associated with these maintenance functions. On the other hand, only 20 percent of their total job time was devoted to system-specific maintenance. Additionally, a review of the course POIs for each missile system, in terms of the total sample of AFSC 316X2G first-enlistment personnel performing the matched tasks, indicated that while all units of POI -001 (WS-133AM and WS-133AM/CDB) were well supported by the survey data, approximately five system-specific units of POI -002 (WS-133B/CDB) were not. This is probably due to the low number of WS-133B/CDB first-term personnel who responded to the survey; however, since there appears to be a high degree of commonality in the overall job performed by first-enlistment personnel, training personnel are encouraged to consider which system-specific areas could be taught together in a common course, and which system-specific areas might be better served by another method of training, such as OJT. A review of AFSC 316X2G first-enlistment total sample data, in conjunction with training emphasis and task difficulty data, would be most helpful in this regard, especially since 5-skill level personnel returning from the field to attend the AZR courses will in essence be receiving the same training that was previously given to individuals in preparation for jobs in their first-enlistment.

#### Analysis of Equipment Used at the Technical School

An additional source of information for AFSC 316X2G (AFSC 411XOA) training personnel involves an analysis of equipment used by personnel in the career ladder as compared to equipment currently used at the technical school. To identify the extent of equipment use by career ladder personnel, approximately 70 pieces of general equipment and 45 pieces of specialty-related test equipment were listed in the background information section of the job inventory. As suggested by these numbers alone, AFSC 316X2G career ladder personnel use many different pieces of equipment. This diversity can pose a potential training problem as to what equipment should be used for initial training. Tables 18 and 19 list general equipment and specialty-related test equipment annotated by technical school personnel as available for training at the training center. Of special interest are equipment items taught in the basic courses, but used by less than 30 percent of the career ladder respondents, particularly those in their first enlistment. While all general equipment currently taught at the technical school is well supported by the survey data, two items of specialty-related test equipment, Alarm Set Fault Locators and Security Alarm Set Test Set groups (AN/GSM-127 or AN/GSM-127A), are used by less than 30 percent of the first-term respondents. Since these pieces of equipment are correspondingly used by over 30 percent of the total sample, technical school personnel should consider whether training on these pieces of

TABLE 18  
GENERAL EQUIPMENT USED AT THE TECHNICAL SCHOOL

EQUIPMENT	PERCENT FIRST-TERM MBRS PERFORMING (N=28)	PERCENT TOTAL SAMPLE MBRS PERFORMING (N=80)
AC VOLTMETERS	93	86
DC VOLTMETERS	93	86
DECade RESISTORS	93	85
DIFFERENTIAL VOLTMETERS	93	86
DIGITAL VOLTMETERS	93	85
FREQUENCY COUNTERS OR METERS	93	85
IMPEDANCE BRIDGES	93	85
MULTIMETERS (FLUKEMETERS)	93	86
OSCILLOSCOPE PLUG-INS	93	86
OSCILLOSCOPES	93	86
PRINTED CIRCUIT CARD PULLERS	93	86
PULSE GENERATORS	93	85
TORQUE WRENCHES	93	85
ATTENUATOR PROBES	89	81
BOLOMETERS	89	81
FUNCTION GENERATORS	89	84
INSERTER/EXTRACTOR TOOLS	89	83
POWER SUPPLIES	89	85
RF (SIGNAL) GENERATORS	89	84
TAPE DEGAUSSERS	89	85
WIRE WRAP KITS	89	79
ELECTRONIC VOLTMETERS	86	83
POWER METERS OR WATTMETERS	86	84
REGULATED POWER SUPPLIES	86	84
AMMETERS	82	74
OSCILLATORS	82	81
TORQUE SCREWDRIVERS	82	80
CHART RECORDERS	79	80
DC VOLT STANDARDS	79	68
VACUUM TUBE VOLTMETERS	79	79
AC VOLTAGE STANDARDS	75	65
DISTORTION ANALYZERS	75	55
TERMINATORS OR TERMINATION PLUGS	75	73
CARRIER DEVIATION METERS	68	71
TIME INTERVAL UNITS	61	64
MEGOHMMETERS	54	44
POWER AMPLIFIERS	50	61

TABLE 19  
SPECIALTY-RELATED TEST EQUIPMENT USED  
AT THE TECHNICAL SCHOOL

<u>EQUIPMENT</u>	PERCENT FIRST-TERM MBRS PERFORMING (N=28)	PERCENT TOTAL SAMPLE MBRS PERFORMING (N=80)
ADAPTER CONNECTOR GROUPS	89	84
SIGNAL DATA RECORDERS	86	79
ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT (AN/GSM-82)	82	83
COMPUTER TEST SET (AN/VYM-3(V)1) DTS	79	74
ELECTRONIC SYSTEMS TEST SETS (AN/GSM-235)	71	71
GUIDED MISSILE TEST STATIONS (AN/GSM-260)	71	69
MEMORY-CONTROLLER GROUP TEST SETS (AN/GSM-234)	71	70
ELECTRONIC DATA PROCESSING TAPE RECORDER REPRODUCERS (RD-368/G)	54	63
DIGITAL DATA COMPUTERS TYPE 1218	50	41
POWER EQUIPMENT TEST SETS (AN/GSM-131)	50	49
MAINTENANCE GROUND EQUIPMENT TEST SET (AN/GSM-145) PERIPHERAL EQUIPMENT	46	43
MAINTENANCE GROUND EQUIPMENT TEST SETS (AN/GSM-139)	43	44
ALARM SET FAULT LOCATORS	29	49
SECURITY ALARM SET TEST SET GROUPS (AN/GSM-127 OR AN/GSM-127A)	21	36

equipment should be continued, especially at the AZR level. Conversely, Tables 20 and 21 list general and specialty-related test equipment used by over 30 percent of the specialty incumbents or first-enlistment personnel, but which are not currently available for training at the basic technical school. In both cases, many of these pieces of equipment are used by over half of career ladder personnel. Technical school personnel are encouraged to perform an in-depth review of these equipment lists to determine the necessity for training on these pieces of equipment and the most effective method to accomplish it.

#### ELECTRONICS PRINCIPLES INVENTORY

An additional source of information for AFSC 316X2G (AFSC 411XOA) training developers is the electronics principles inventory (EPI). The EPI is a 1,366 item, knowledge-based inventory which identifies the range of electronics principles personnel must understand to perform any electronics-oriented job. The difference between OSR data and EPI data relates to the type of inventory items used and the type of data collected for those items. Occupational survey reports use a performance-based job inventory with specific task statements developed to provide a precise picture of the kinds of functions personnel in a specific AFS actually perform at a specific point in time. The data collected for these task statements include percent members performing, relative time spent, task difficulty, and training emphasis. The Electronics Principles Inventory, on the other hand, uses a knowledge-based inventory with questions developed to provide an objective measurement of electronics knowledge required to perform an electronics-oriented job. Training managers can use EPI data in conjunction with OSR data to determine precisely what specialists do and what electronics principles they employ on the job.

The EPI was administered to 5- and 7-skill level personnel in those specialties for which electronics training is provided at Chanute AFB. These personnel responded either "yes" or "no" to the 1,366 electronics principles items as they related to their present job. A report summarizing the results of this survey was published in April 1984. Copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB, Texas 78150-5000.

In this EPI survey, DAFSC 31652G personnel used the electronics principles included in the inventory quite extensively when compared to the other specialties surveyed. Their use of these principles was especially predominant in the following areas: Registers, Alternating Current, Oscilloscopes, Input/Output (Peripheral) Devices, Resistors/Resistive Circuits, Soldering/Solderless Connections, Power Supplies, Meters/Multimeters, Relays, Storage Devices, Capacitors/Capacitive Reactance, Logic Functions, Mathematics, Waveshaping Circuits, Meter Movements, Computers/Microprocessors/Programming, and Timing Circuits. (For a more detailed explanation of these subject areas, see the Chanute EPI report mentioned above.)

TABLE 20  
GENERAL EQUIPMENT NOT CURRENTLY USED  
AT THE TECHNICAL SCHOOL

<u>EQUIPMENT</u>	<u>PERCENT FIRST-TERM MBRS PERFORMING (N=28)</u>	<u>PERCENT TOTAL SAMPLE MBRS PERFORMING (N=80)</u>
DEPTH MICROMETER	89	80
MANOMETERS	82	75
FIXED PRECISION ATTENUATORS	75	74
RFI DETECTORS	75	69
STOP WATCHES	75	79
DIRECTIONAL COUPLERS	71	73
VARIABLE ATTENUATORS	71	60
NITROGEN CYLINDERS	68	58
TENSION GAUGES	68	63
FREQUENCY SYNTHESIZERS	64	63
INSTRUMENT CALIBRATION STANDARDS	64	55
THERMOMETERS	64	56
VARIACS	64	65
CURRENT PROBES	61	55
DIAL INDICATORS	61	61
LOAD BANKS	61	65
PRESSURE GAUGE SETS	61	45
VOLTAGE DIVIDERS	57	41
FLOWMETERS	50	36
MILLIOHMETERS	50	45
SIGNAL AMPLIFIERS	50	40
WAVE ANALYZERS	50	28
THICKNESS GAUGES	46	38
GAS REGULATORS	43	38
TRANSISTOR TESTERS	43	35
PHASE SHIFTER	36	44

TABLE 21  
SPECIALTY-RELATED TEST EQUIPMENT NOT  
CURRENTLY USED AT THE TECHNICAL SCHOOL

<u>EQUIPMENT</u>	<u>PERCENT FIRST-TERM MBRS PERFORMING (N=28)</u>	<u>PERCENT TOTAL SAMPLE MBRS PERFORMING (N=80)</u>
CODE CHANGE-VERIFIER TEST ADAPTERS, AN/GSM-155	89	78
MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)	89	81
LIQUID COOLER TEST SETS	86	78
MAGNETIC TAPE UNITS	82	75
POWER SYSTEM VERIFICATION BOXES (PSVB)	82	78
TAPE TRANSPORTS	82	76
BREAKOUT BOXES	79	75
CONTROL MONITOR GROUP TEST SETS	75	56
ELECTRICAL CABLE TEST SETS	71	60
ELECTRICAL POWER TEST SETS	71	68
MISSILE GUIDANCE SETS	71	65
GUIDANCE AND CONTROL (GC) SECTIONS	68	63
PROGRAMMER GROUP TEST SETS	68	53
EXPLOSIVE CIRCUITRY TEST SETS	57	66
INERTIAL PERFORMANCE DATA (IPD) PROCESSORS	57	60
POWER SUPPLY TEST SETS (AN/GSM-136)	57	46
MAINTENANCE TEST SETS (SMSB)	50	43
TEST CAPACITORS	43	33
ULTRASONIC LEAK DETECTORS	36	29
ALARM TEST SETS	32	46

Although DAFSC 31652G personnel use electronics principles a great deal, DAFSC 31650G personnel use these principles very little (see the Chanute EPI report mentioned above for more information). For example, while 356 of the electronics principles items were used by at least 50 percent of the DAFSC 31652G respondents, only 23 of the electronics principles items were used by at least 50 percent of the DAFSC 31650G respondents. Since these AFSCs were merged to form AFSC 411XOA, training personnel will want to consider which electronics principles should be taught to airmen entering the specialty, as well as to airmen returning for training at the 5-skill level. Since airmen entering the specialty are assigned to jobs involving former AFSC 316X0G tasks, it seems that limited electronics principles training would be appropriate. This, in turn, would indicate additional electronics principles training for personnel returning for training at the 5-skill level, since this training qualifies these personnel to work in jobs involving former AFSC 316X2G tasks. Currently, 5-skill level personnel returning for training receive instruction in electronics principles during Block I of the AZR courses (C3AZR41150A-000 and C3AZR41150A-001). Training personnel are encouraged to use the EPI report data in conjunction with OSR data to determine if this training in electronics principles is adequate.

#### COMPARISON OF CURRENT SURVEY TO PREVIOUS SURVEY

The results of this survey were compared to those of the last survey of this career ladder, published in June 1978 (Report Number: AFPT 90-316-261). The 1985 survey included only AFSC 316X2G personnel, while the 1979 survey also included AFSC 316X0G personnel. Additionally, at the time of the 1978 survey, WS-133AM and WS-133AM/CDB E-LAB responsibilities were part of AFSC 316X2G, while WS-133B/CDB E-LAB responsibilities were part of AFSC 316X2H. Since then, these WS-133B/CDB responsibilities have been absorbed into AFSC 316X2G.

Findings from the earlier study are consistent with the 1985 data. The AFSC 316X2G job groups identified in the analyses of the career ladder structures were similar, though some of the job groups were identified in greater detail in the 1985 survey. A comparison of related job groups is shown in Figure 3. Many of the general groups of the 1978 survey include combinations of the more specific groups of the 1985 survey. One group was identified in the 1985 survey for which no corresponding group was found in the 1978 survey (Instrumentation Laboratory Technicians). Also, one group identified in the 1978 survey (Training Instructors) was not identified as a distinct job group in the 1985 survey due to the low number of these personnel responding to the survey. A comparison of DAFSC groups from the 1978 and 1985 surveys also showed similar groupings. In both surveys, most 5-skill level personnel grouped into maintenance-related job groups, while the majority of 7-skill level personnel grouped into supervisory and administrative job groups.

Review of the comparisons of job satisfaction indicators by TAFMS groups in Table 22 indicates that positive responses for 1985 respondents generally are equal to or higher than positive responses by 1978 respondents for all

**411X0A JOB SPECIALTY COMPARISONS BETWEEN CURRENT AND PREVIOUS SURVEYS**

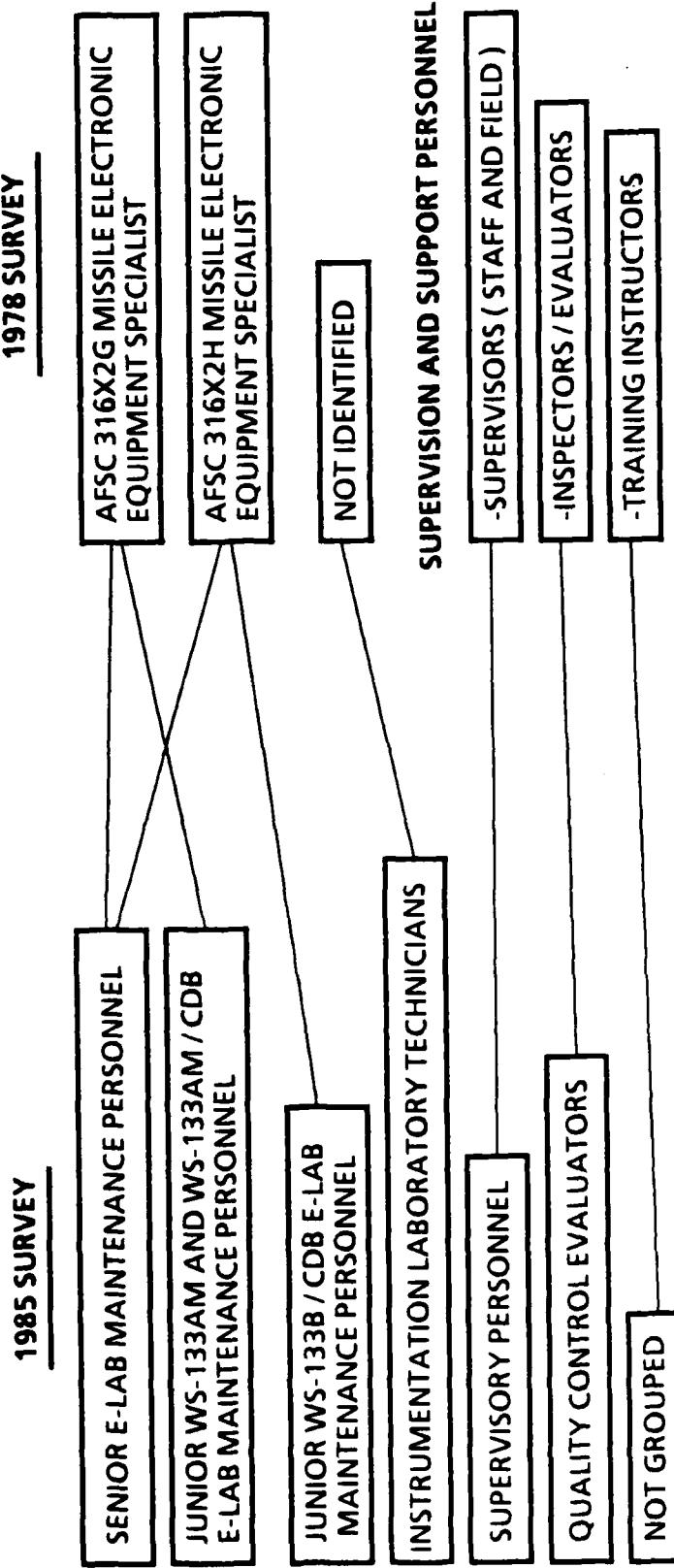


Figure 3

TABLE 22

COMPARISON OF 316X2G JOB SATISFACTION INDICATIONS BY TAFMS GROUPS  
(PERCENT MEMBERS RESPONDING)\*

	1-48 MOS TAFMS			49-96 MOS TAFMS			97+ MOS TAFMS		
	1985	316X2G	1978	1985	316X2G	1978	1985	316X2G	1978
<u>EXPRESSED JOB INTEREST:</u>									
INTERESTING	79	39	60	61	64	33	83	50	100
SO-SO	21	22	20	26	27	0	10	0	0
DULL	0	11	20	8	9	33	7	17	0
<u>PERCEIVED USE OF TALENTS:</u>									
FAIRLY WELL TO PERFECTLY	89	61	60	78	64	67	86	67	100
LITTLE OR NOT AT ALL	11	39	40	17	36	33	10	17	0
<u>PERCEIVED USE OF TRAINING:</u>									
FAIRLY WELL TO PERFECTLY	93	67	80	91	82	100	72	58	100
LITTLE OR NOT AT ALL	7	28	20	4	18	0	28	33	0
<u>SENSE OF ACCOMPLISHMENT:</u>									
SATISFIED	75	39	60	57	73	33	62	42	100
NEUTRAL	14	28	0	13	0	33	3	25	0
DISSATISFIED	11	28	40	26	27	33	35	33	0
<u>REENLISTMENT INTENTIONS:</u>									
WILL/PROBABLY WILL									
REENLIST	39	28	40	57	46	33	62	75	100
WILL NOT/PROBABLY WILL									
NOT REENLIST	61	67	60	39	36	67	14	25	0

\*Columns may not add to 100 percent due to nonresponse and rounding

categories compared. This is a trend that can be seen in many other AFSCs as well. It is interesting to note, however, that reenlistment intentions of first-enlistment (1-48 months TAFMS) personnel have remained fairly stable from 1978 to 1985, despite the fact that positive responses on all other job satisfaction indicators for this group have increased. This finding is somewhat unusual in light of a general trend across recently surveyed AFSCs, in which expressed reenlistment intentions for first-term personnel have been more positive than those expressed in previous surveys.

Overall, the AFSC 316X2G career ladder seems relatively stable in terms of basic job structure. The merger of the AFSC 316X2G career ladder with the AFSC 316X0G career ladder, though, should result in some changes as new jobs are added. Some of those changes may be inferred from descriptions of AFSC 316X0G job groups, which have been published in a separate occupational survey report (Report Number: AFPT 90-316-529, dated July 1985). Copies of this report may be obtained upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph AFB, Texas 78150-5000.

## SURVEY COMMENTS

In addition to answering background questions and rating tasks performed, survey respondents may also write in comments or add information at the end of the survey booklet. These survey comments may address many different issues; it is helpful to consider multiple comments on an issue to identify those of importance.

### General Comments

Although few personal opinion comments were received for this occupational survey, the majority of those received were directed toward first-term training. Specifically, these respondents indicated that airmen entering the career ladder seldom have sufficient experience in the use of general test equipment, and recommended that concentrated training be given in this area at the basic technical school. Examples of equipment mentioned included AC, DC, and digital voltmeters, counters, FM signal generators, multimeters, oscilloscopes, power meters, pulse generators, time interval units, and wave analyzers.

In addition to the comments regarding first-term training, comments providing additional information on tasks performed in the field were also received. Most of these comments highlighted work with either the Peacekeeper missile or the Expanded Minuteman Data Analysis System (EMDAS). Those who reported working with the Peacekeeper Missile Program performed tasks in support of operational test and evaluation, while those who reported working with EMDAS performed tasks associated with review and update of EMDAS output data. Because this system came into operation about the same time this inventory was developed, the only survey information available is that provided by write-in comments to the inventory and task factor rating booklets.

### Strength and Stamina

In the task factor rating booklets, raters were asked to identify those tasks which first-enlistment personnel they supervise have difficulty performing due to excessive physical strength or stamina requirements inherent in the tasks. Approximately one-fourth of the raters (11 of 42) identified tasks meeting these criteria, but no more than 4 of these raters identified any one task as requiring excessive strength or stamina. In short, strength and stamina does not appear to be a major issue of concern.

## IMPLICATIONS

As mentioned in the INTRODUCTION, the purpose of this survey was to focus on tasks currently performed by former AFSC 316X2G personnel to assist training personnel in future technical course revisions. The current inventory has

allowed a much more detailed analysis of the types of jobs in the career ladder structure. One impact on training from the analysis can be seen in the similarity of job performance by former AFSC 316X2G first-enlistment personnel. Only 20 percent of their total job time is devoted to system-specific maintenance (WS-133AM, WS-133AM/CDB, and WS-133B/CDB missile weapon systems), while over 70 percent of their total job time is devoted to maintenance of equipment common to the WS-133 systems, performing general maintenance on missile equipment, removing and installing missile equipment, and performing administrative tasks associated with these maintenance functions. Since the new AFSC 411XOA AZR courses (former AFSC 316X2G ABR courses) are system-specific (WS-133A systems and WS-133B/CDB system), training personnel should explore the possibility of combining these separate courses into one course covering key principles from both missile weapon systems.

Review of the tentative Specialty Training Standard (STS) for AFSC 411XOA indicated several areas that may require some adjustments. Specifically, paragraphs covering 494L equipment, as well as paragraphs covering certain items of WS-133B/CDB equipment, were not supported by survey data. Training personnel should examine these areas to determine if criticality, safety, or some other consideration requires that they remain in the STS. Also, several tasks supported by survey data were not referenced to any paragraphs of the STS. These tasks should be reviewed to identify areas that may warrant inclusion in the STS.

The evaluation of the Plans of Instruction (POI) for the former AFSC 316X2G ABR courses (current AFSC 411XOA AZR courses) revealed that both POIs are well supported by survey data, but a series of tasks performed by substantial numbers of first-enlistment WS-133AM and WS-133AM/CDB personnel, as well as WS-133B/CDB 5-skill level personnel, are not referenced to any blocks of the POIs. Most of these tasks involve maintenance of equipment common to the WS-133 systems, and should be reviewed for possible inclusion in the common portion of the AFSC 411XOA AZR POIs (Blocks I and II). Additionally, a review of the AFSC 411XOA course POIs in terms of the total sample of first-enlistment personnel performing the matched tasks indicated that while all units of POI -000 (WS-133AM and WS-133AM/CDB) are well supported by survey data, many system-specific units of POI-001 (WS-133B/CDB) are not. These data tend to support the above recommendation to combine these separate courses into one course covering key principles from both missile weapon systems.

Analysis also indicated the AFR 39-1 Specialty Description for the 7-skill level does not reflect the substantial degree of involvement of these senior technicians in supervisory, managerial, and administrative duties, while overemphasizing their performance of day-to-day maintenance tasks. Adjustments to the description are probably appropriate.

**APPENDIX A**  
**SELECTED REPRESENTATIVE TASKS PERFORMED**  
**BY CAREER LADDER STRUCTURE GROUPS**

TABLE I

GROUP ID NUMBER AND TITLE: GRP015 - SENIOR E-LAB MAINTENANCE PERSONNEL

GROUP SIZE: 41

PERCENT OF SAMPLE: 51%

AVERAGE GRADE: E-4

AVERAGE TICF: 58 MONTHS

AVERAGE TAFMS: 76 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS	PERCENT MEMBERS PERFORMING
F183 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSORS (MPP)	100
F184 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MMPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	98
G223 TROUBLESHOOT MINUTEMAN POWER PROCESSOR VERIFICATION BOXES (MPPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	98
F162 PERFORM CHECKOUTS OF AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	98
G202 TROUBLESHOOT AN/GSM-82 ELECTRONIC FACILITY-BASE MAINTENANCE TEST EQUIPMENT	98
G224 TROUBLESHOOT MINUTEMAN POWER PROCESSORS (MPP)	95
G211 TROUBLESHOOT CODE INSERTER-VERIFIER SETS	95
Q585 REMOVE OR INSTALL CONNECTORS OR CONNECTOR PINS	95
Q597 REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	95
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	93
F163 PERFORM CHECKOUTS OF AN/GSQ-96 CODE CHANGE-VERIFIER SETS	93
G205 TROUBLESHOOT AN/GSQ-96 CODE CHANGE-VERIFIER SETS	93
I272 PERFORM CHECKOUTS OF AN/GSM-260 GUIDED MISSILE SYSTEMS TEST STATIONS	90
0558 WRAP OR UNWRAP SOLDERLESS WIRE CONNECTIONS	90
E126 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) REQUISITIONS FOR SUPPLIES OR EQUIPMENT	88
Q579 REMOVE OR INSTALL CABLE ASSEMBLIES	85
J342 TROUBLESHOOT AN/GSM-260 GUIDED MISSILE SYSTEM TEST STATIONS	80
E114 ISSUE, SIGN FOR, OR TURN IN CLASSIFIED EQUIPMENT	80
E107 INITIATE OR ANNOTATE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	78
I276 PERFORM CHECKOUTS OF AN/GSW-10 DATA ANALYSIS CENTRALS USING AN/GSM-260	78
0535 INSTALL TEST EQUIPMENT	78
I293 PERFORM CHECKOUTS OF FAULT LOCATING INDICATORS (ID-2288)	76

TABLE II

GROUP ID NUMBER AND TITLE: GRP027 - JUNIOR WS-133AM AND WS-133AM/CDB E-LAB  
MAINTENANCE PERSONNEL

GROUP SIZE: 4

PERCENT OF SAMPLE: 5%

AVERAGE GRADE: E-4

AVERAGE TICF: 31 MONTHS

AVERAGE TAFMS: 35 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS	PERCENT MEMBERS PERFORMING
E112 INVENTORY TOOLS	100
0517 CLEAN ELECTRÓNIC EQUIPMENT	100
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	100
E147 TAG SERVICEABLE OR UNSERVICEABLE EQUIPMENT	100
0556 TIGHTEN BOLTS OR NUTS TO SPECIFIED TORQUE VALUES	100
Q582 REMOVE OR INSTALL COAXIAL CABLES	100
F184 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR VERIFICA- TION BOXES (MMPVB)/POWER SYSTEM VERIFICATION BOXES (PSVB)	100
0543 PERFORM CHECKOUTS OF INTERFACE CABLES	100
Q613 REMOVE OR INSTALL MINOR HARDWARE, SUCH AS HINGES OR KNOBS	100
I299 PERFORM CHECKOUTS OF OUTER ZONE (OZ) DRAWERS	100
0554 SOLDER ELECTRICAL CONNECTIONS	100
0555 STRIP WIRES	100
0537 LOAD PAPER ON PRINTER EQUIPMENT	100
I294 PERFORM CHECKOUTS OF INNER ZONE (IZ) DRAWERS	100
J371 TROUBLESHOOT OUTER ZONE (OZ) DRAWERS	100
J365 TROUBLESHOOT INNER ZONE (IZ) DRAWERS	100
Q597 REMOVE OR INSTALL FUSES OR CIRCUIT BREAKERS	75
I293 PERFORM CHECKOUTS OF FAULT LOCATING INDICATORS (ID-2288)	75
Q593 REMOVE OR INSTALL DUST CAPS ON CONNECTORS	75
P572 VISUALLY INSPECT AEROSPACE GROUND EQUIPMENT (AGE)	75
I302 PERFORM CHECKOUTS OF PP-3026/GSW-4 OR PP-3027/GSW-4 POWER SUPPLIES	75
J374 TROUBLESHOOT PP-3026/GSW-4 OR PP-3027/GSW-4 POWER SUPPLIES	75
Q594 REMOVE OR INSTALL ELECTRONIC EQUIPMENT DRAWERS	75
0535 INSTALL TEST EQUIPMENT	75
0545 PERFORM HIGH RELIABILITY SOLDERING	75

TABLE III

GROUP ID NUMBER AND TITLE: GRP016 - JUNIOR WS-133B/CDB E-LAB MAINTENANCE PERSONNEL

GROUP SIZE: 3

PERCENT OF SAMPLE: 4%

AVERAGE GRADE: E-4

AVERAGE TICF: 27 MONTHS

AVERAGE TAFMS: 65 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
F183 PERFORM CHECKOUTS OF MINUTEMAN POWER PROCESSOR (MPP)	100
G224 TROUBLESHOOT MINUTEMAN POWER PROCESSORS (MPP)	100
Q579 REMOVE OR INSTALL CABLE ASSEMBLIES	100
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	100
0543 PERFORM CHECKOUTS OF INTERFACE CABLES	100
0537 LOAD PAPER ON PRINTER EQUIPMENT	100
0556 TIGHTEN BOLTS OR NUTS TO SPECIFIED TORQUE VALUES	100
M494 TROUBLESHOOT UNITS OF R-1389/GRA-80 UHF RADIO RECEIVERS	100
N501 ALIGN UNITS OF R-1384/GRA-80 UHF RADIO RECEIVERS	100
Q582 REMOVE OR INSTALL COAXIAL CABLES	100
F187 PERFORM CHECKOUTS OF MX-9115/G KEYBOARD PRINTER SETS	100
F195 PERFORM CHECKOUTS OF UNITS OF AN/GSM-234 MEMORY CONTROLLER GROUP TEST SETS	100
F196 PERFORM CHECKOUTS OF UNITS OF AN/GSM-235 ELECTRONIC SYSTEMS TEST SETS	100
L464 PERFORM SELF-TESTS OF AN/GSM-139 MAINTENANCE GROUND EQUIPMENT TEST SETS	100
L438 PERFORM CHECKOUTS OF AN/GSM-139 MAINTENANCE GROUND EQUIPMENT TEST SETS	100
Q585 REMOVE OR INSTALL CONNECTORS OR CONNECTOR PINS	100
L440 PERFORM CHECKOUTS OF AN/GSM-235 ELECTRONIC SYSTEMS TEST SETS	100
E107 INITIATE OR ANNOTATE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	67
G226 TROUBLESHOOT MX-9115/G KEYBOARD PRINTER SETS	67
F163 PERFORM CHECKOUTS OF AN/GSQ-96 CODE CHANGE-VERIFIER SETS	67
L437 PERFORM CHECKOUTS OF AN/GSM-136 POWER SUPPLY TEST SETS	67
L439 PERFORM CHECKOUTS OF AN/GSM-145 PERIPHERAL EQUIPMENT	67
L465 PERFORM SELF-TESTS OF AN/GSM-145 PERIPHERAL EQUIPMENT	67
0534 INSTALL SOLDERLESS CONNECTIONS	67
0536 LOAD OR UNLOAD TAPES ON TAPE READERS	67

TABLE IV

GROUP ID NUMBER AND TITLE: GRP026 - INSTRUMENTATION LABORATORY TECHNICIANS  
 GROUP SIZE: 3 PERCENT OF SAMPLE: 4%  
 AVERAGE GRADE: E-4 AVERAGE TICF: 45 MONTHS  
 AVERAGE TAFMS: 53 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
0523 DISSAMBLE OR REASSEMBLE NS-17 MISSILE GUIDANCE SETS	100
Q576 REMOVE OR INSTALL BATTERIES IN MISSILE GUIDANCE CONTROL SECTIONS	100
0556 TIGHTEN BOLTS OR NUTS TO SPECIFIED TORQUE VALUES	100
Q573 REMOVE OR INSTALL ACCESS COVERS OR PLATES	100
Q618 REMOVE OR INSTALL PERMUTATION (P) PLUGS ON MISSILE GUIDANCE CONTROL SECTIONS	100
0524 DISASSEMBLE OR REASSEMBLE NS-20 MISSILE GUIDANCE SETS	100
Q603 REMOVE OR INSTALL INTERFACE CABLES	100
F197 PERFORM MISSILE GUIDANCE SET (MGS) TO R/S INTERFACE CABLE CHECKOUTS	100
Q582 REMOVE OR INSTALL COAXIAL CABLES	100
E107 INITIATE OR ANNOTATE AFTO FORMS 349 (MAINTENANCE DATA COLLECTION RECORD)	100
E115 LOCATE INFORMATION IN TECHNICAL OR SUPPLY PUBLICATIONS	100
Q608 REMOVE OR INSTALL MAJOR SUBASSEMBLIES, SUCH AS PANELS	100
0543 PERFORM CHECKOUTS OF INTERFACE CABLES	100
Q602 REMOVE OR INSTALL INTEGRATED CIRCUIT CARDS OR PRINTED CIRCUIT ASSEMBLIES	100
0545 PERFORM HIGH RELIABILITY SOLDERING	100
F157 MATE MOD 7 TO NS 20 MGS	67
F158 MATE MOD 8 TO NS 17 MGS	67
F173 PERFORM CHECKOUTS OF ELECTRICAL CABLE TEST SETS	67
F185 PERFORM CHECKOUTS OF MOD 8 (MMII) INSTRUMENTATION UNITS	67
P559 CALIBRATE TORQUE TOOLS	67
F186 PERFORM CHECKOUTS OF MULTIPLEXER PROGRAMMER GROUP TEST SETS	67
F171 PERFORM CHECKOUTS OF DATA INTERFACE SIGNAL SIMULATORS OH-81-DSM-82 (DISS)	67
H242 ADJUST MULTIPLEXER PROGRAMMER GROUP TEST SETS	67
H252 CALIBRATE DATA INTERFACE SIGNAL SIMULATORS OH-81-DSM-82 (DISS)	67
Q611 REMOVE OR INSTALL METERS OR INDICATORS	67

TABLE V

GROUP ID NUMBER AND TITLE: GRP018 - QUALITY CONTROL EVALUATORS  
 GROUP SIZE: 8 PERCENT OF SAMPLE: 10%  
 AVERAGE GRADE: E-5 AVERAGE TICF: 107 MONTHS  
 AVERAGE TAFMS: 112 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS	PERCENT MEMBERS PERFORMING
C46 EVALUATE PERSONNEL PERFORMING MAINTENANCE	100
C56 OBSERVE PERSONNEL PERFORMING MAINTENANCE	100
C64 PREPARE INSPECTION REPORTS	100
C60 PERFORM TECHNICAL INSPECTIONS	100
C68 REVIEW PROPOSED TECHNICAL DATA CHANGES	100
C65 REVIEW AND DETERMINE APPLICABILITY OF TIME COMPLIANCE TECHNICAL ORDERS (TCTO) OR MASTER CHANGE LOGS (MCL)	100
C59 PERFORM TECHNICAL ACCEPTANCE INSPECTIONS	100
C62 PERFORM TECHNICAL VERIFICATION INSPECTIONS	88
C61 PERFORM TECHNICAL SURVEILLANCE INSPECTIONS	88
C57 PERFORM ACTIVITY INSPECTIONS	88
C58 PERFORM SPECIAL INSPECTIONS AS REQUESTED BY MAINTENANCE SUPERVISORS	88
C67 REVIEW INCOMING STANDARD PUBLICATIONS	75
C43 EVALUATE INSPECTION REPORTS OR PROCEDURES	75
C41 EVALUATE COMPLIANCE WITH PERFORMANCE STANDARDS	63
C38 COMPLETE SAC FORMS 1503 (ROUTING AND REVIEW OF QUALITY CONTROL REPORTS)	63
C66 REVIEW FOR ACCURACY, INTENT, AND NECESSITY SUPPLEMENTS AND MAINTENANCE OPERATING INSTRUCTIONS	63
C51 EVALUATE SUGGESTIONS	63
E145 REVIEW TECHNICAL ORDERS (TO)	63
C49 EVALUATE SECURITY PROGRAMS	63
D90 EVALUATE TRAINING METHODS OR TECHNIQUES	50
C45 EVALUATE MAINTENANCE OR USE OF WORKSPACE, EQUIPMENT, OR SUPPLIES	50
C48 EVALUATE SAFETY PROGRAMS	50
C47 EVALUATE PROCEDURES FOR STORAGE, INVENTORY, OR INSPECTION	50

TABLE VI

GROUP ID NUMBER AND TITLE: GRP013 - SUPERVISORY PERSONNEL  
 GROUP SIZE: 12 PERCENT OF SAMPLE: 15%  
 AVERAGE GRADE: E-7 AVERAGE TICF: 122 MONTHS  
 AVERAGE TAFMS: 185 MONTHS

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

<u>TASKS</u>	<u>PERCENT MEMBERS PERFORMING</u>
C63 PREPARE APR	100
A3 COORDINATE ACTIVITIES OF SPECIALISTS	100
E116 MAINTAIN CLASSIFIED EQUIPMENT STORAGE AREAS	100
E114 ISSUE, SIGN FOR, OR TURN IN CLASSIFIED EQUIPMENT	100
D93 PREPARE AF FORMS 623 (ON-THE-JOB TRAINING RECORD)	100
C56 OBSERVE PERSONNEL PERFORMING MAINTENANCE	92
B22 COUNSEL PERSONNEL ON PERSONAL OR MILITARY-RELATED PROBLEMS	92
B36 SUPERVISE MISSILE ELECTRONIC TECHNICIANS (AFSC 31672G)	92
E103 COORDINATE SUPPLY REQUESTS WITH BASE OR WING SUPPLY	92
B23 COUNSEL SUBORDINATES ON JOB PROGRESSION OR CAREER DEVELOPMENT	92
E119 MAINTAIN FILES OF UNCLASSIFIED MATERIEL OR MESSAGES	92
A10 ESTABLISH PERFORMANCE STANDARDS FOR SUBORDINATES	92
E127 PREPARE AF FORMS 302 (ROOM OR AREA SECURITY INSPECTION RECORD)	92
E144 REVIEW STATUS OF AWAITING PARTS (AWP) ITEMS	83
B35 SUPERVISE MISSILE ELECTRONIC SPECIALISTS (AFSC 31652G)	83
E148 TRANSFER CLASSIFIED ITEMS	83
E104 COORDINATE WORK REQUESTS WITH MAINTENANCE CONTROL	75
E140 REVIEW MAINTENANCE OR INSPECTION REPORTS	75
D88 EVALUATE PERSONNEL FOR NEED OF TRAINING	75
C42 EVALUATE INDIVIDUALS FOR PROMOTION, DEMOTION, OR RECLASSIFICATION	75
E108 INITIATE OR PREPARE WORK ORDERS OTHER THAN MAINTENANCE DATA COLLECTION FORMS	67
B30 IMPLEMENT SUGGESTION PROGRAMS	67
E126 PREPARE AF FORMS 2005 (ISSUE/TURN IN REQUEST) REQUISITIONS FOR SUPPLIES OR EQUIPMENT	67
E143 REVIEW STATUS OF AWAITING MAINTENANCE (AWM) ITEMS	58
D92 PLAN OJT	58

**APPENDIX B**

**TENTATIVE STS 411XOA ITEMS NOT SUPPORTED  
BY SURVEY DATA**

STS ELEMENT (WITH TASKS)	PERCENT PERFORMING				TASK DIFF**
	TNG EMP*	1ST ENL	DAFSC 31652G	DAFSC 31672G	
34A CHECKOUT CONTROL MONITOR TEST SET (494L)					
1329 PERFORM CHECKOUTS OF (494L) CONTROL MONITOR TEST SETS	.33	4	10	0	6.17
34B TROUBLESHOOT CONTROL MONITOR TEST SET (494L)					
J391 TROUBLESHOOT 494L CONTROL MONITOR TEST SETS	.40	4	10	0	6.84
39A CHECKOUT DATA TRANSFER UNIT (494L)					
I330 PERFORM CHECKOUTS OF 494L DATA TRANSFER UNITS	.33	4	10	0	5.87
39B TROUBLESHOOT DATA TRANSFER UNIT (494L)					
J392 TROUBLESHOOT 494L DATA TRANSFER UNITS	.33	0	4	10	6.49
39D ADJUST DATA TRANSFER UNIT (494L)					
K415 ADJUST 494L DATA TRANSFER UNITS	.13	0	4	10	5.27
58A(1) CHECKOUT DIRECT CURRENT POWER FILTER ASSEMBLY (F-639/GSW-4)					
I292 PERFORM CHECKOUTS OF DIRECT CURRENT POWER FILTERS (F-639/GSW-4)	.07	4	10	0	4.40

STS ELEMENT (WITH TASKS)	PERCENT PERFORMING			
	TNG EMP*	1ST ENL	DAFSC 316526	DAFSC 316726
				TASK DIFF**
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
34A      CHECKOUT CONTROL MONITOR TEST SET (494L)	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
1329 PERFORM CHECKOUTS OF (494L) CONTROL MONITOR TEST SETS	.33	4	10	0
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
34B      TROUBLESHOOT CONTROL MONITOR TEST SET (494L)	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
J391 TROUBLESHOOT 494L CONTROL MONITOR TEST SETS	.40	4	10	0
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
39A      CHECKOUT DATA TRANSFER UNIT (494L)	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
1330 PERFORM CHECKOUTS OF 494L DATA TRANSFER UNITS	.33	4	10	0
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
39B      TROUBLESHOOT DATA TRANSFER UNIT (494L)	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
J392 TROUBLESHOOT 494L DATA TRANSFER UNITS	.33	0	4	10
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
39D      ADJUST DATA TRANSFER UNIT (494L)	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
K415 ADJUST 494L DATA TRANSFER UNITS	.13	0	4	10
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
58A(1)    CHECKOUT DIRECT CURRENT POWER FILTER ASSEMBLY (F-639/GSW-4)	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
1292 PERFORM CHECKOUTS OF DIRECT CURRENT POWER FILTERS (F-639/GSW-4)	.07	4	10	0
- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
				4.40

STS ELEMENT (WITH TASKS)	PERCENT PERFORMING				
	TNG EMP*	1ST ENL	DAFSC <u>316526</u>	DAFSC <u>316726</u>	TASK DIFF**
58A(2) TROUBLESHOOT DIRECT CURRENT POWER FILTER ASSEMBLY (F-639/GSM-4)					
J358 TROUBLESHOOT DIRECT CURRENT POWER FILTERS (F-639/GSM-4)	.00	4	10	8	4.28
58B(2) TROUBLESHOOT TELEPHONE-TRANSMITTER CONTROL (C-3937/GTC)					
J348 TROUBLESHOOT C-3937/GTC TELEPHONE-TRANSMITTER CONTROLS	.00	0	4	0	5.18
60B(1) CHECKOUT BATTERY CHARGER (PP-4069/GSA-67)					
L451 PERFORM CHECKOUTS OF PP-4069/GSA-76 BATTERY CHARGERS	.13	7	8	0	5.85
60B(2) TROUBLESHOOT BATTERY CHARGER (PP-4069/GSA-67)					
M481 TROUBLESHOOT PP-4069/GSA-76 BATTERY CHARGERS	.00	7	8	0	6.26
62A(1) CHECKOUT BATTERY CHARGER (PP-3926/FSQ-49)					
L448 PERFORM CHECKOUTS OF PP-3926/FSQ-49 LAUNCH FACILITY BATTERY CHARGERS	.00	7	10	4	5.53
62A(2) TROUBLESHOOT BATTERY CHARGER (PP-3926/FSQ-49)					
M478 TROUBLESHOOT PP-3926/FSQ-49 LAUNCH FACILITY BATTERY CHARGERS	.00	7	12	4	5.83

STS ELEMENT (WITH TASKS)	TNG EMP*	TST ENL	PERCENT PERFORMING			TASK DIFF**
			DAFSC 31652G	DAFSC 31672G	DAFSC 31672G	
68A(1) CHECKOUT LOW PASS FILTER (F-891/GRA-79)						
- L428 PERFORM CHECKOUTS OF AN/GRA-79 MF RADIO SUBSYSTEMS	.33	4	10	4	5.48	
68A(2) TROUBLESHOOT LOW PASS FILTER (F-891/GRA-79)						
- M484 TROUBLESHOOT UNITS OF AN/GRA-79 MEDIUM FREQUENCY RADIO SUBSYSTEMS	.00	4	12	4	6.10	
68B(1) CHECKOUT LOW PASS FILTER (F-892/GRA-79)						
- L428 PERFORM CHECKOUTS OF AN/GRA-79 MF RADIO SUBSYSTEMS	.33	4	10	4	5.48	
68B(2) TROUBLESHOOT LOW PASS FILTER (F-892/GRA-79)						
- M484 TROUBLESHOOT UNITS OF AN/GRA-79 MEDIUM FREQUENCY RADIO SUBSYSTEMS	.00	4	12	4	6.10	
68J(1) CHECKOUT ANTENNA CONTROL (HF) C-6137/GRC-132 (6206A2)						
- L432 PERFORM CHECKOUTS OF AN/GRC-132 MF RADIO SUBSYSTEMS	.33	4	8	0	5.55	
68J(2) TROUBLESHOOT ANTENNA CONTROL (HF) C-6137/GRC-132 (6206A2)						
- M488 TROUBLESHOOT UNITS OF AN/GRC-132 MF RADIO SUBSYSTEMS	.33	4	6	0	6.15	

STS ELEMENT (WITH TASKS)	PERCENT PERFORMING				
	TNG EMP*	1ST ENL	DAFSC <u>31652G</u>	DAFSC <u>31672G</u>	TASK DIFF**
68J(3) REPAIR ANTENNA CONTROL (HF) C-6137/GRC-132 (6206A2)					
N498 ADJUST AN/GRC-131 OR AN/GRC-132 RADIO SETS	.00	4	6	0	5.24
68K(1) CHECKOUT INTERCONNECTING BOX J2232/GRC-132 (6206A1)					
L432 PERFORM CHECKOUTS OF AN/GRC-132 MF RADIO SUBSYSTEMS	.33	4	8	0	5.55
68K(2) TROUBLESHOOT INTERCONNECTING BOX J2232/GRC-132 (6206A1)					
M488 TROUBLESHOOT UNITS OF AN/GRC-132 MF RADIO SUBSYSTEMS	.33	4	6	0	6.15
68K(3) REPAIR INTERCONNECTING BOX J2232/GRC-132 (6206A1)					
N498 ADJUST AN/GRC-131 OR AN/GRC-132 RADIO SETS	.00	4	6	0	5.24
68L(1) CHECKOUT INTERCONNECTING BOX J2230/GRC-131 (6218A1)					
L431 PERFORM CHECKOUTS OF AN/GRC-131 MF RADIO SUBSYSTEMS	.33	4	10	0	5.55
68L(2) TROUBLESHOOT INTERCONNECTING BOX J2230/GRC-131 (6218A1)					
M487 TROUBLESHOOT UNITS OF AN/GRC-131 MF RADIO SUBSYSTEMS	.33	4	8	0	6.15
68L(3) REPAIR INTERCONNECTING BOX J2230/GRC-131 (6218A1)					
N498 ADJUST AN/GRC-131 OR AN/GRC-132 RADIO SETS	.00	4	6	0	5.24

STS ELEMENT (WITH TASKS)	PERCENT PERFORMING			
	TNG EMP*	1ST ENL	DAFSC 31652G	DAFSC 31672G
				TASK DIFF**
71A CHECKOUT MONITOR CIRCUIT TEST SET (AN/DRM-26) (494L)				
1266 PERFORM CHECKOUTS OF AN/DRM-26 MONITOR CIRCUIT TEST SETS	.07	0	4	0
71B TROUBLESHOOT MONITOR CIRCUIT TEST SET (AN/DRM-26) (494L)				
J336 TROUBLESHOOT AN/DRM-26 MONITOR CIRCUIT TEST SETS	.13	0	4	0
74A CHECKOUT PAYLOAD COMMAND SIMULATOR (SM-549/DRM-25) (494L)				
I309 PERFORM CHECKOUTS OF SM-549/DRM-25 PAYLOAD COMMUNICATIONS SIMULATORS	.00	0	6	0
75A CHECKOUT PAYLOAD TEST SET SUBASSEMBLY (AN/DRM-25) (494L)				
I265 PERFORM CHECKOUTS OF AN/DRM-24 PAYLOAD TEST SET SUBASSEMBLIES	.07	4	10	0
75B TROUBLESHOOT PAYLOAD TEST SET SUBASSEMBLY (AN/DRM-25) (494L)				
J335 TROUBLESHOOT AN/DRM-24 PAYLOAD TEST SET SUBASSEMBLIES	.13	4	10	0

\*Average TE rating is 1.10 and Standard Deviation is 1.17  
 \*\*Average TD rating is 5.00



F I L M E D

6-86

D T C